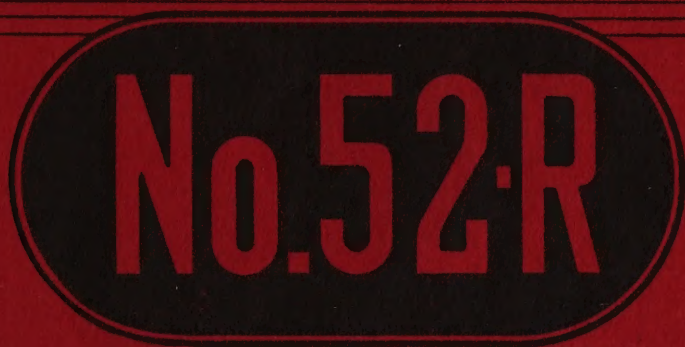


# **OWNER'S MANUAL**

## **AND PARTS LIST**

**McCORMICK-DEERING**



**No. 52-R**

# **Harvester-Thresher**

**INTERNATIONAL HARVESTER COMPANY**

**180 NORTH MICHIGAN AVE.**

**CHICAGO 1, ILLINOIS, U.S.A.**

## TO THE PURCHASER—

We wish to congratulate you on your choice of a McCormick-Deering No. 52-R Harvester-Thresher. In order that you may obtain the full benefits from this machine, read this Owner's Manual carefully.

The McCormick-Deering No. 52-R Harvester-Thresher is the outgrowth of many years of experience and exhaustive field tests, not only by our Engineers, but by thousands of owners all over the country who have used these machines in all kinds of crops and under all kinds of conditions.

Remember, you may have the best built machine on earth, but best results will not be obtained unless the operator understands its correct adjustment.

When in need of parts, always give the International Harvester dealer your Harvester-Thresher serial number. We suggest that you write these numbers in the spaces provided below for ready reference when parts are required.

Harvester-Thresher Serial No.....

*(Stenciled on right side of machine below cylinder. See Illust. 2.)*

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 **Keep this book handy for ready reference.**

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*It is the policy of International Harvester Company to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on Harvester-Threshers sold previously.*

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## INSTRUCTIONS FOR OPERATING

Whenever the terms "*right*" and "*left*" are used in this book, it should be understood to mean from a position behind and facing the machine.

Serial Number of machine is stencilled on right side just below the cylinder. See *Illust. 2*. Always give Serial Number when ordering parts.

### PNEUMATIC TIRES

Six-ply 5.50 x 16" pneumatic tires are used regularly for this machine.

**IMPORTANT!** Tires should be inflated to 44 pounds pressure.

**WARNING:** When both the tractor and the Harvester-Thresher are mounted on rubber tires, static electricity, generated by belt work, can be discharged harmlessly by attaching a chain to the machine and allowing the free end to drag on the ground.



### LUBRICATION

The machine is designed to require the minimum amount of lubrication; however, careful and sufficient lubrication is the best insurance against delays, increases the life of the machine, and saves many dollars in parts.

Lubricate the machine thoroughly and be sure that all oil holes are free from paint or dirt so that the lubricant actually gets down into the bearings.

Care must be taken to see that all bearings are lubricated their full length. Roller bearings that have oil chambers will require more lubricant at the first filling than plain bearings. To make sure that all bearings are properly lubricated, lubricant should be forced into them until it begins to appear at the sides.

The main wheels should always be lubricated before transporting the machine on the highway.

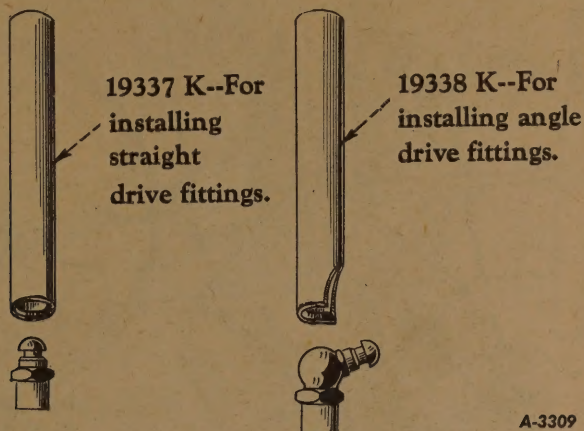
The bushings in the center plate of the cylinder speed changing device should be lubricated occasionally to insure easy sliding of the plate.



## LUBRICATION - Continued

## IMPORTANT!

This machine is equipped with "drive type" lubricating fittings. When inserting fittings in the holes provided, it is necessary to use special drive tools as illustrated.



Part No. 19337 K is for installing straight fittings; Part No. 19338 K is for installing angle fittings. Fittings will be ruined if driven in with a hammer. Proper drive tools should be used.

## GEAR CASE

## WARNING!

There is no lubricant in the main drive gear case when the machine leaves the factory. Before starting, remove filler plug (see illust. 3) and fill gear case with approved lubricant. The gear case requires 1 quart to fill.

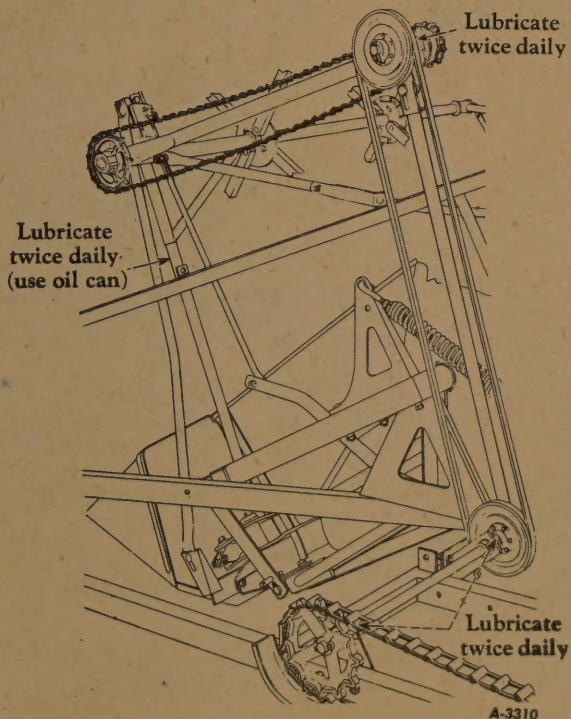
The gear case should be checked *twice a week* for the proper amount of transmission lubricant. Level plug is located on left side of gear case. See *Illust. 3*.

SAE 140 should be used when minimum temperature is above 40° F.

SAE 90 should be used when minimum temperature is below 40° F.

**IMPORTANT!** Keep the supply of lubricant clean and free from dust or dirt. Use clean containers. Keep lubricator gun clean and wipe all dirt from hydraulic fittings before using gun.

Lubricant container should always be covered to prevent entry of dirt which may clog the fittings.



Illust. 1 - Ground drive reel (special) showing points requiring lubrication.











## STARTING THE NEW MACHINE

After the machine has been set up, go over it carefully to see that all nuts are thoroughly tightened and that all cotters are in place and spread.

Before starting the machine, turn the cylinder by hand until the elevator conveyor chains have made a complete revolution to insure that they, as well as the other parts, work freely.

Before actually going into the field, pull the machine to a level spot to determine whether or not the tractor draw bar is adjusted to the proper height. The "A" frame should be as nearly level as the adjustment of the draw bar will permit.

After the machine has been thoroughly lubricated, start the tractor engine well throttled down. Let in the clutch slowly and run the machine at slow speed for fifteen to thirty minutes. This will give the operator time to go over all the bearings to see that they are running cool. The machine should then be run at normal speed for a short time and, if everything is found satisfactory, it is ready for the field.

The first round in the field is usually the hardest. It is usually around the edge of the field where the grain is apt to be a little green, heavy or weedy and a full cut must be taken.

The tractor should be operated in low gear the first round to lessen the volume of grain that must be handled.

The tractor should be operated on a set throttle to maintain correct and even cylinder speed. In fields that are badly washed, rocky or in any condition that will require slowing up the tractor frequently, shift to low gear. **DO NOT USE THE THROTTLE TO EASE THROUGH ROUGH SPOTS**, as this will reduce the speed of the entire machine, the air blast will be reduced allowing chaff to fall in the clean grain, and unthreshed head may get through the cylinder.

**IMPORTANT!** Be sure to check the tractor engine speed since it is always possible the tractor engine speed governor may have been changed for some previous operation. The governor should be set so that the speed of the power take-off shaft is approximately 594 R.P.M. with no load on the engine which gives a load speed of approximately 540 R.P.M.

The speed of the power take-off shaft should be constant at 540 R.P.M. since all cylinder speed adjustments are made by the variable speed changing device.

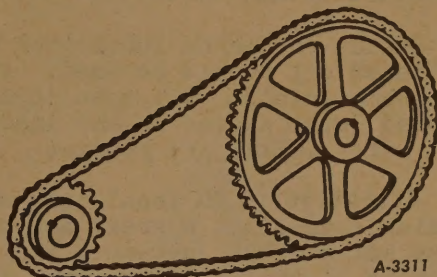


## CHAINS

### CHAIN TENSION ADJUSTMENT

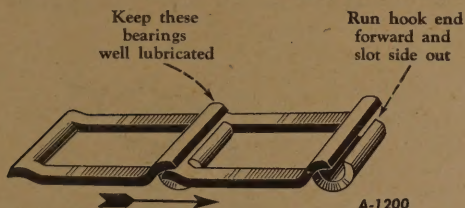
After machine has been run for a time, it will be found that chains have stretched a little and they should be tightened.

Chains should be adjusted to have a slight amount of slack, as shown in *Illust. 4*. Too much tension causes undue wear on chain, wasteful friction on the bearings, and increases draft of machine. Not enough tension may allow chain to jump the sprocket, ride the teeth and break or whip excessively.



*Illust. 4*  
Correct chain tension.

### CORRECT ASSEMBLY OF OPEN JOINT CHAINS

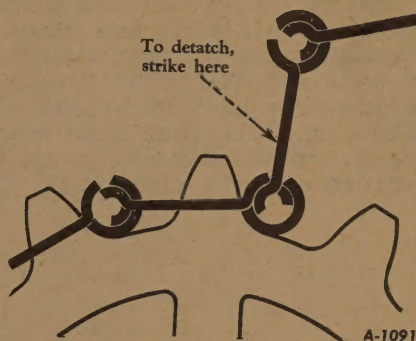


*Illust. 5*  
Correct chain assembly.

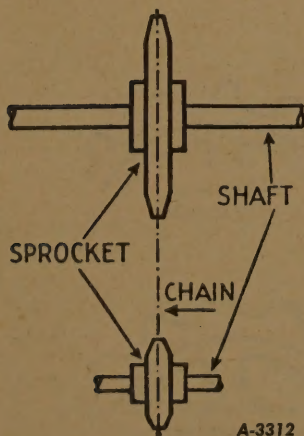
When assembling detachable or open joint chains place chain on sprocket with hooks forward and slot side out, to run in direction of travel, except when otherwise indicated in the instructions and illustrations. Keep chains oiled.

### TO DETACH CHAIN (Open Joint Type)

To detach open joint chains, bend to coupling position, and strike light blows at point indicated in *Illust. 6*.



*Illust. 6*  
To detach chain.



*Illust. 7*  
Sprocket Alignment.

### PROPER ALIGNMENT

Be sure that sprockets are in line on the shafts. If sprockets are not exactly in line, a side pull develops which concentrates the load on the sides of the sprocket teeth, and on the side of the chain. This faulty alignment results in excessive wear on both chains and sprockets. See *Illust. 7*.



## CHAINS - Continued

### PROPER LUBRICATION OF CHAINS

Chains should be lubricated at frequent intervals. A good grade of light cylinder oil should be used. A paint brush is a good thing for applying oil to chain joints. Oil open joint chains on the open (upper) side. Oil closed joint chains on the inside (upper side of lower strand). Never apply oil while chains are running.

**Exceptions:** In localities where the soil is sandy or full of grit, chains exposed to a great amount of dust frequently run a longer period of time without the continued application of oil. It is good practice, in conditions of this kind, to "run-in" new chains by operating the machine idle in a clean place, lubricating them during the "running-in" period. After five or six hours of this idle operation, the chain links have established a wear-fit to each other and their sprockets. Before putting the machine into regular operation, wipe excessive oil from the chains. After this initial lubricant has dissipated itself, the chain should not be lubricated further, as the addition of more oil will accumulate grit and "lapping" will commence.

### FREQUENT CLEANING

Chains should be cleaned regularly. Take the chain off, and clean it well by soaking and dipping in kerosene. Dry well and oil it thoroughly. Before storing your machine, clean all the chains, and oil them with heavy oil or grease. When they are to be used again, re-clean and oil with light oil.

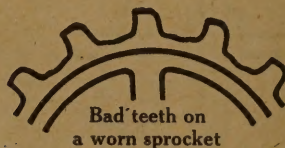


A-3313

Illustr. 8  
Cleaning chains.

### WELL-FITTING SPROCKETS

Examine the sprockets from time to time to make sure that they are not worn enough to injure the chain. Before the teeth are worn to a hook shape, as shown in Illustr. 9 the sprockets should be replaced with new ones.

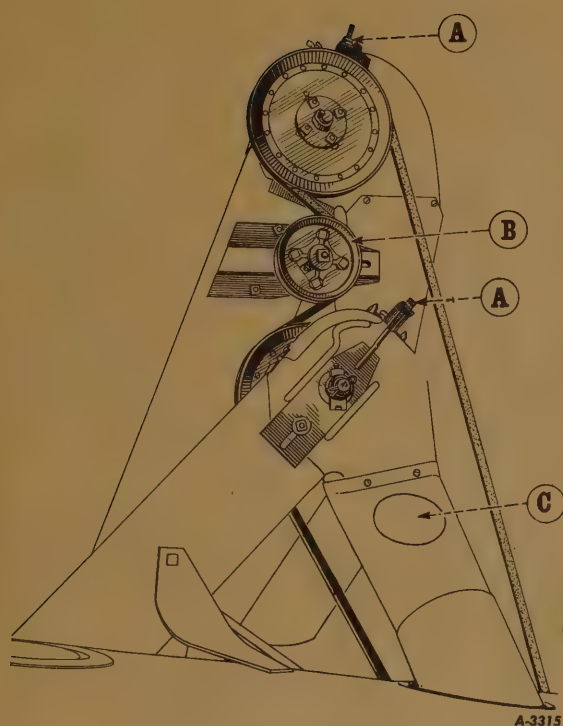


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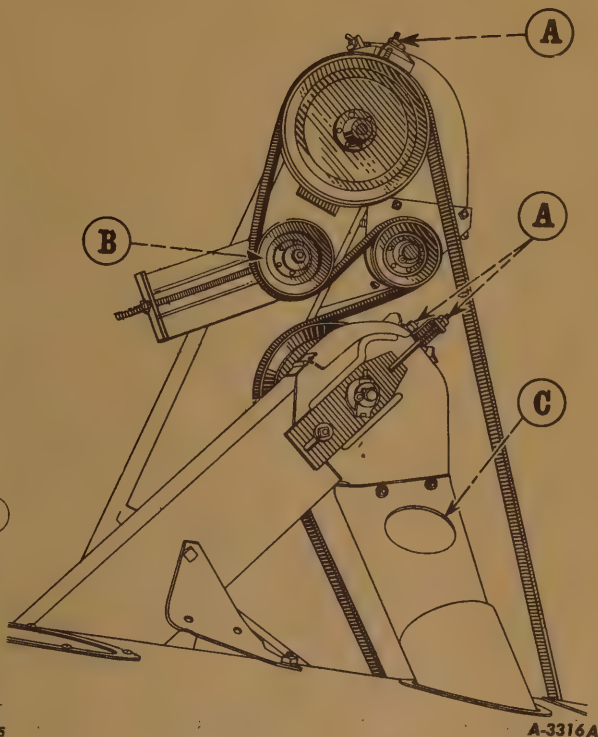
Illustr. 9  
New and worn sprockets.



## CHAINS - Continued



Illustr. 10  
Elevator conveyor chains  
and elevator drive belt  
tightener (Bagger  
Machines).



Illustr. 11  
Elevator conveyor chains  
and elevator drive belt  
tightener (Grain Tank  
Machines).

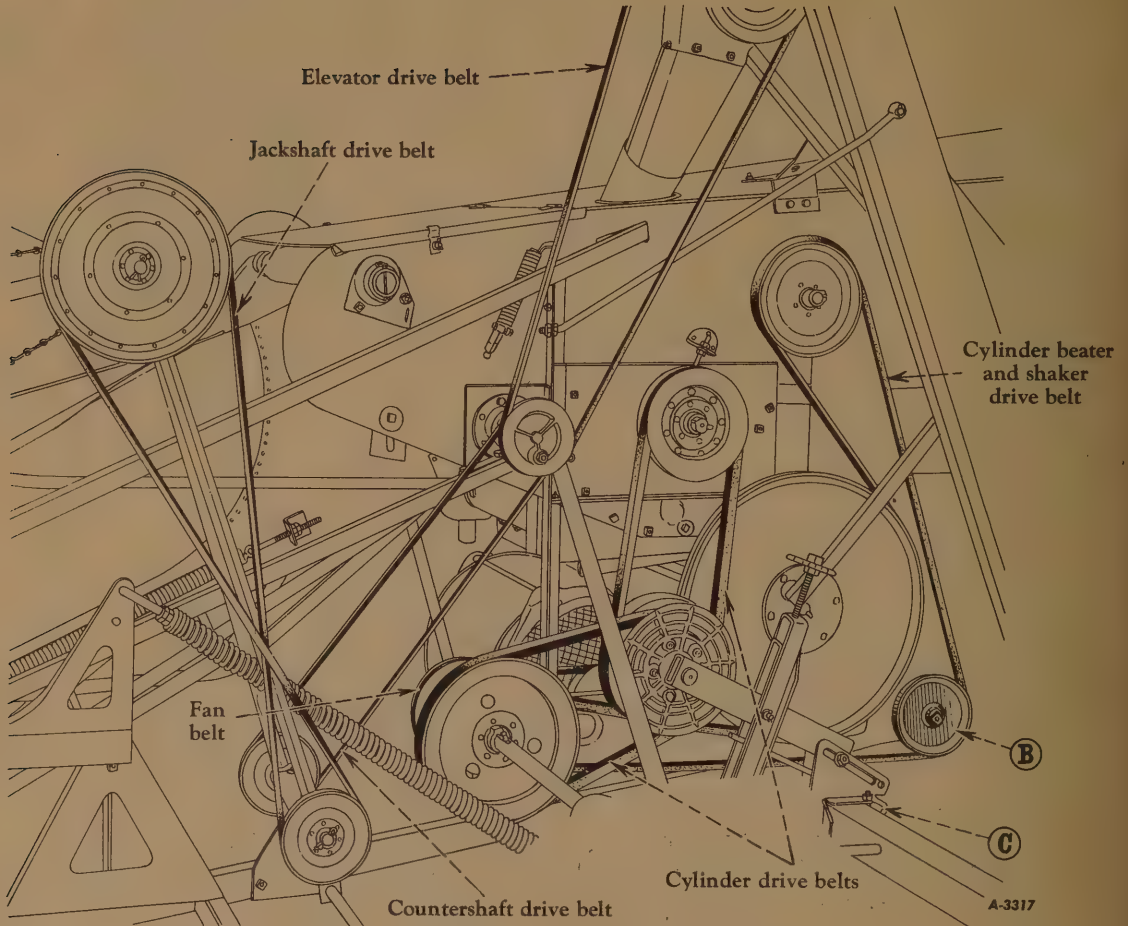
The elevator conveyor chains may be adjusted by loosening the nut on the long bolt that holds the head shaft bearing bracket to the casing, and tightening the long threaded bolts "A" at upper end of elevator. See Illustr. 10 and 11.

Tightening or loosening the elevator conveyor chains will also tighten or loosen the elevator drive belt. The tightener pulley "B" on this belt should also be adjusted. Be sure to tighten all bolts that were loosened, after making chain adjustments.

Special steel elevator chain flights are provided for use in wet and muddy soil conditions, to prevent dirt from caking in the elevators. Two flights per chain, equally spaced, are recommended for best results. The ordering number for four of these special flights is 28200 K.



## BELTING



Illustr. 12 - Drive belts (left side).

Examine the belts periodically for proper tension.

"V" type belts do not require as much tension as flat type belts.

Keep the belts tight enough to prevent slipping but not so tight that they will spring the shafts.

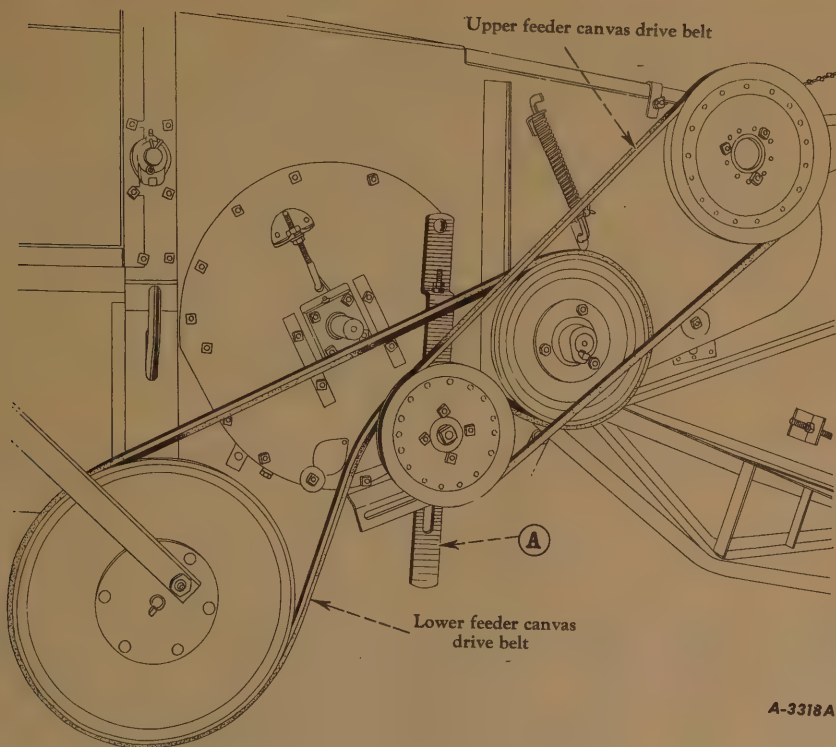
Tension is proper when you can depress the belt slightly between the pulleys with little effort.

**KEEP THE BELT PULLEYS IN LINE.**

Keep the belts free from mineral oils (generally used for lubricating bearings). Oil softens rubber causing it to wear rapidly.



## BELTING - Continued



Illust. 13 - Drive belts (right side).

Always loosen the tightener pulley when installing a new belt. Belts stretch as they are used. The tighteners are adjusted in maintaining proper belt tension to compensate for the increase in belt length. Placing a new belt on a drive with the tightener pulley adjusted for the old or lengthened belt imposes a severe stress on the new belt and pulley shafts. After the new belt is placed on the pulleys, adjust the tightener until the belt has the correct tension.

**Warning!** Drive belts may be seriously damaged if you start the machine at full speed before the belts are properly adjusted.

### BELT ADJUSTMENTS

Tighten the upper and lower feeder canvas drive belts by adjusting the tightener pulley arm. See "A", Illust. 13.

Tighten the cylinder beater and shaker drive belt by moving the idler pulley rearward. See "B", Illust. 12.

Tighten the fan drive belt by removing the shims found between the pulley discs to increase the pitch diameter of the pulleys. **Caution:** When tightening this belt, be sure to remove the same amount of shims from both pulleys. The speed of the fan will be changed if both pulleys are not adjusted equally.



## BELTING - Continued

### BELT ADJUSTMENTS - Continued

The cylinder and countershaft drive belts may be tightened by means of the adjusting crank found in pulley supporting arm bracket. See "C", *Illust. 12*.

The elevator drive belt may be tightened by adjusting the tightener pulley located on the grain elevator. See "B", *Illusts. 10 and 11*.

### TO TIGHTEN THE REEL DRIVE V-BELT

(For Ground Drive Reel or Power Drive Reel)

Loosen the bolt that holds the slotted adjusting brackets to the lower spreader pipe. See "A", *Illust. 28*. Adjust the spreader pipe as may be required to tighten the belt; then retighten the bolt.

## SAFETY CLUTCHES

Safety clutches are placed on the main drive shaft and elevator drive shaft. If any unusual strain is put on these moving parts, the clutch will slip before any part of the machine is broken. If the operator hears one of these clutches slipping, he will know that some part of the machine is not running and should stop and remedy the trouble. It will be well to force these clutches to slip a few times before starting the machine to see that they are not stuck with paint.

Slip clutch sprockets provided with oil holes should be oiled occasionally to insure easy sliding of the sprocket on the shaft in case the clutch slips from overload.

NOTE: Do not tighten any of these clutches unless positive that it is necessary to do so.

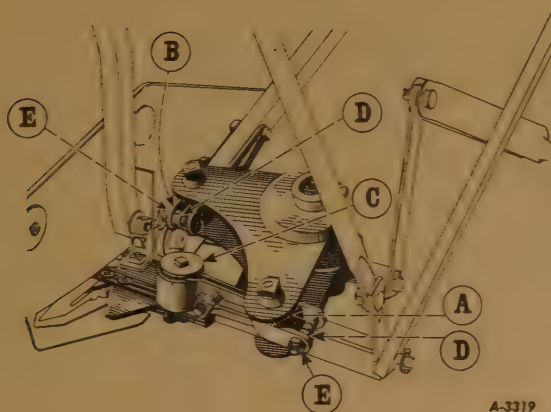
## CUTTING

The knife, operating at 400 strokes per minute, assures clean cutting if the knife and guards are in good condition. The guards and knife clips must be tight and in line so that the knife will be held firmly on the guard sections; chipped and worn out ledger plates and knife sections should be replaced. CHOKING, RAGGED CUTTING, OR STRIPPING MAY RESULT IF THESE PARTS ARE NEGLECTED.

Cutting should never be lower than necessary to get all the heads off the grain. Cutting lower than necessary increases the volume of material going through the separator, thus making separating of the grain from the straw more difficult.

The combination knife clip and knife head guide (see "A", *Illust. 15*) is adjustable to compensate for wear. This guide is properly adjusted when the knife slides freely without allowing excessive clearance. This adjustment is made by using the correct amount of washers under the combination knife clip and knife head guide.

## KNIFE DRIVE



Illustr. 14 - Knife drive.

The knife is driven from the feed conveyor drive shaft by means of the pitman and bell crank.

The pitman and knife connection are attached to the bell crank by means of adjustable clamp and ball connections. See "A" and "B", *Illust. 14*.

The knife bell crank link is clamped to the knife head on a shockproof rubber bushing. See "C", *Illust. 14*. NEVER OIL THIS RUBBER BUSHING.

This entire drive requires very little attention except to keep the balls and clamps snugly tight and properly oiled.

To tighten the pitman or knife head ball clamps, loosen lock nut "D" on adjusting screw, tighten nut "E" then retighten lock nut.

## FEEDING

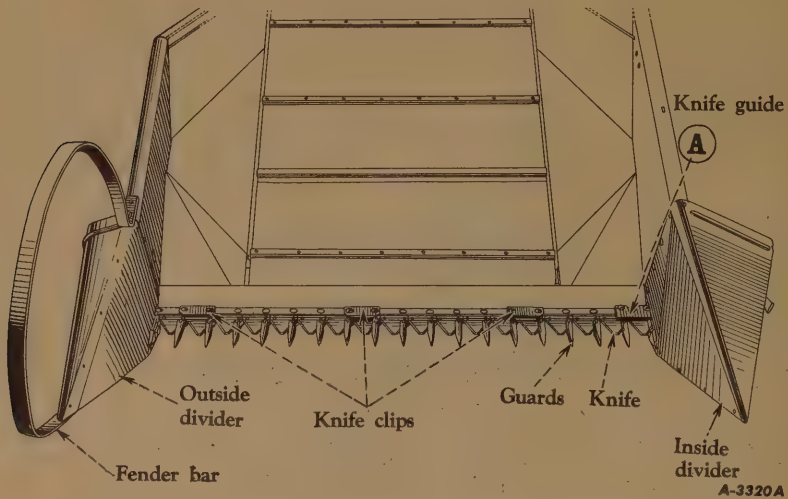
The lower feed conveyor canvas carries the cut grain into the feeder. The upper canvas strips the grain from the lower canvas to prevent wrapping and back feeding so it must pass directly into the cylinder.

In long, tangled or fluffy straw or in any other condition when bunching persists in front of the upper feeder canvas, feeding may be improved by removing the feeder top door to allow the spiked canvas slats to contact the straw sooner. In extreme cases it may be necessary to use the notched angle cylinder bars. See *Illust. 85*.

When cutting very heavy tangled grain or beans grown with corn stalks, or when threshing windrowed grain, the cylinder cover front extension may be removed to provide a larger opening for the heavy volume of straw entering the cylinder.



## KNIFE AND DIVIDER POINTS



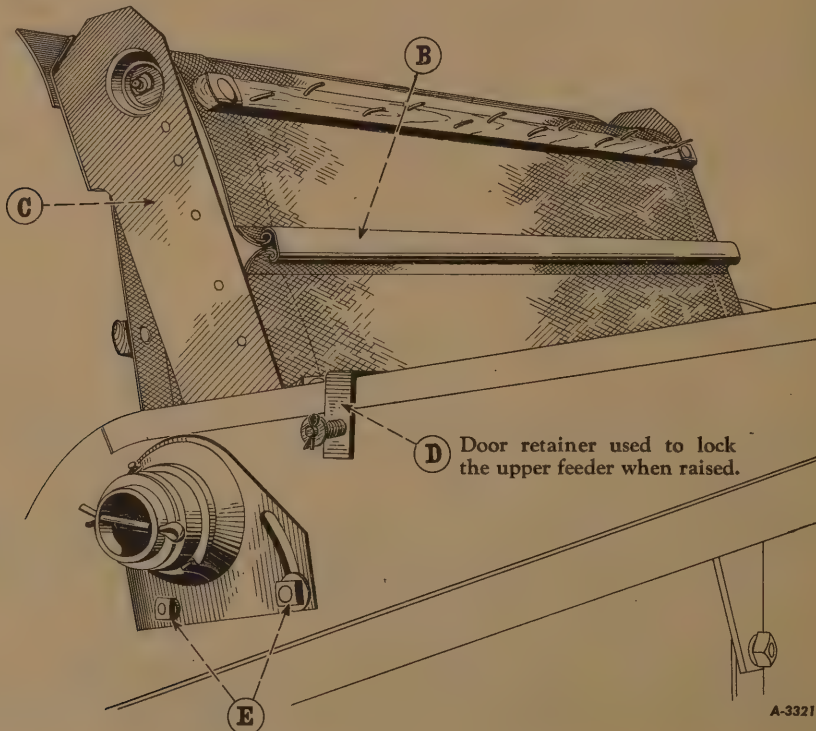
Illust. 15 - Knife and divider points.

## FEEDER CANVASES

The machine is equipped with rubberized weatherproof conveyor canvases.

The ends of the canvas are joined together by means of two rods held in a steel coupler. See "A" and "B", *Illust. 22*.

NOTE: Powdered soapstone applied to the coupler permits easy application of the same.



Illust. 16 - Upper feeder canvas frame locked in raised position, when making adjustments, tightening, installing or removing canvases.

## FEEDER CANVASES - Continued

### UPPER CANVAS

The upper canvas is assembled in a floating frame which may be raised for easy access when making adjustments, tightening, installing or removing canvas. See "C", *Illust. 16*.

**CAUTION!** Whenever the upper canvas frame is raised, be sure to lock the frame in place with the spring clips (door retainers) behind the frame. See "D", *Illust. 16*.

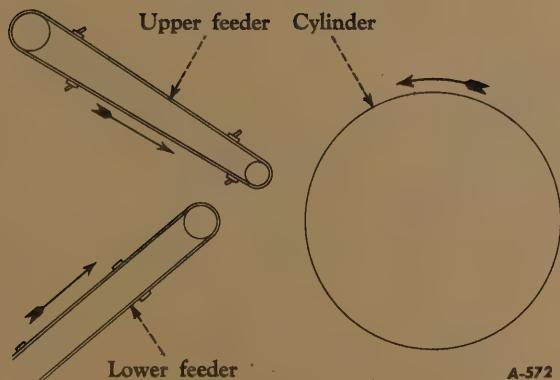
To tighten the upper canvas, loosen drive belt, also the nuts on the bolts holding the adjustable bearing brackets. See "E", *Illusts. 16 and 22*. Then raise the bearing brackets upward enough to tighten the canvas.

After tightening the canvas, retighten the nuts and readjust the drive belt tightener.

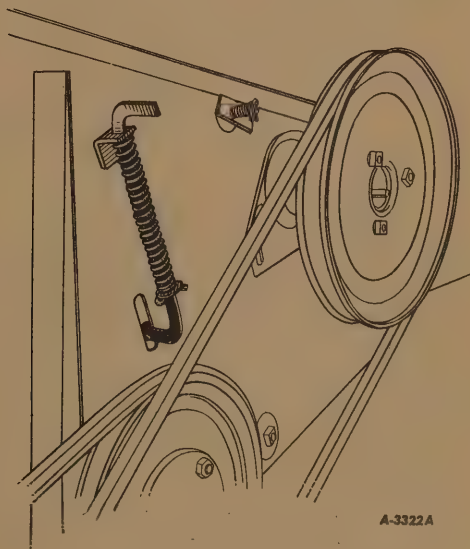
To remove the upper canvas, raise the complete canvas frame as shown in *Illusts. 16 and 22*; slide off the coupler "B", and remove the canvas.

Upper feeder canvas hold-down compression springs, see *Illust. 18*, hold the canvas down against material entering the upper feeder, thus preventing large bunches of material from raising canvas frame beyond its normal floating range which would loosen or stop the canvas.

**IMPORTANT!** When installing the upper feeder canvas, thread the canvas on the roller with the bent slat spikes pointing to the rear of the machine as shown in *Illust. 17*. This is necessary to prevent the spikes from carrying the grain over and back to the feeder.



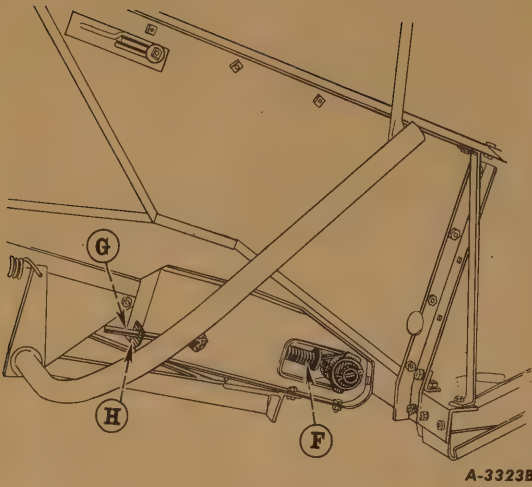
**Illust. 17**  
Assembly of upper feeder canvas.



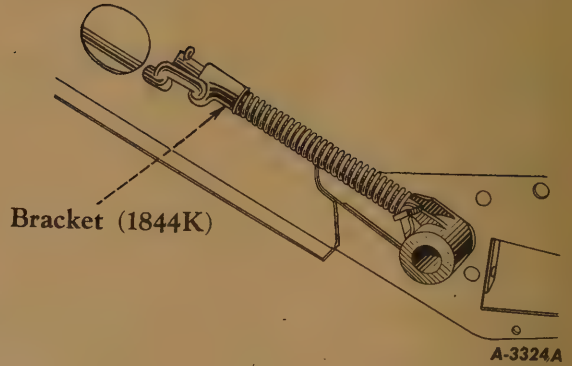
**Illust. 18**  
Upper feeder canvas  
hold-down compression springs.



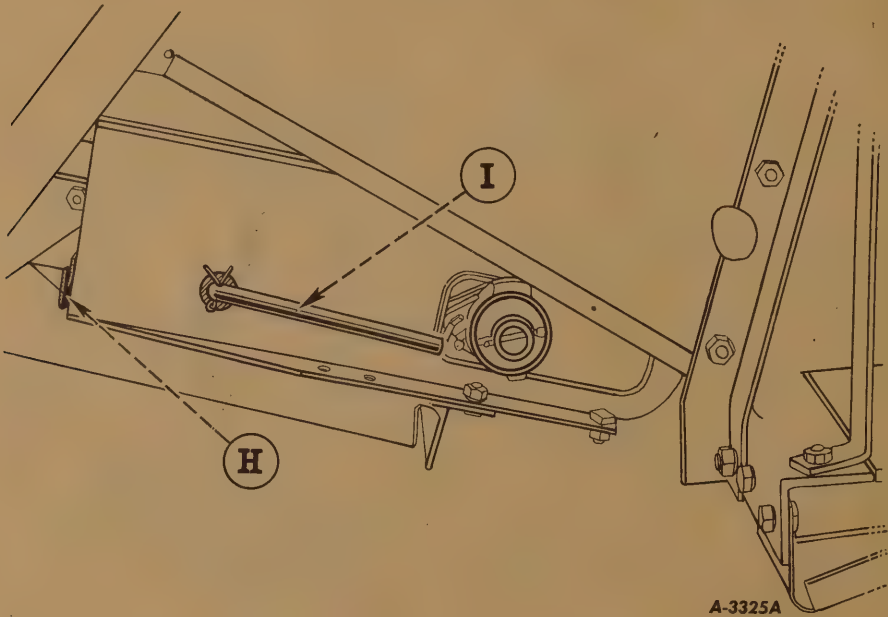
# FEEDER CANVASES - Continued



Illustr. 19  
Lower feeder canvas tightener  
springs and spring compression  
rods.

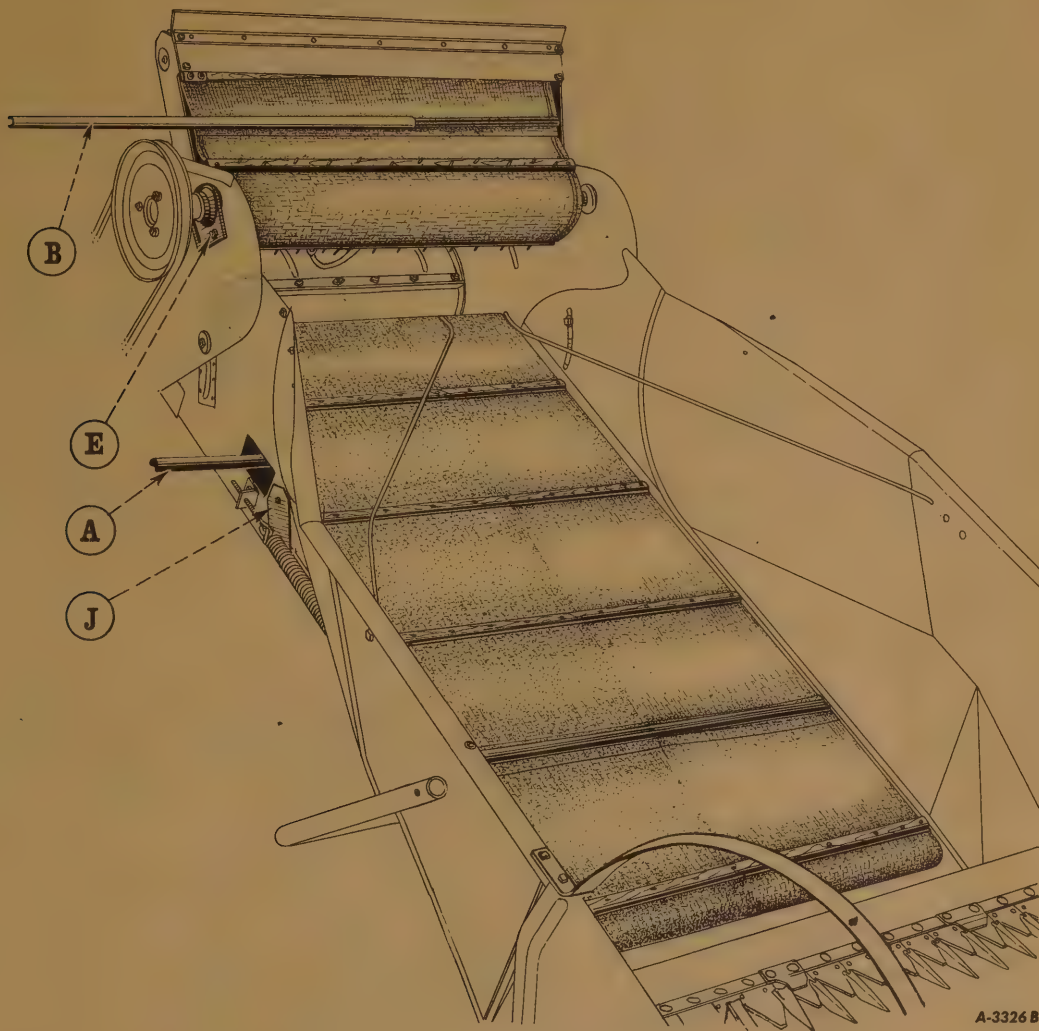


Illustr. 20  
Lower feeder canvas tightener  
rod bracket (1844 K) reversed  
for tightening stretched  
canvas.



Illustr. 21  
Lower canvas compression rod in released position.

## FEEDER CANVASES - Continued



A-3326 B

Illustr. 22 - Removing feeder canvas couplers.

## LOWER CANVAS

The lower canvas is self tightening by means of the compression springs which are held against the front bearings. See "F", *Illustr. 19*. The springs are assembled on leverage-type compression rods which are held in place by means of a lock bracket. See "G", and "H", *Illustr. 19*.

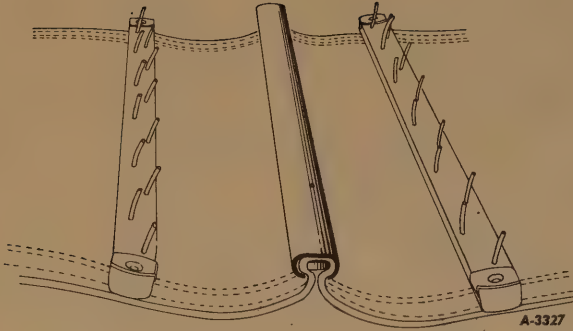
If lower canvas becomes stretched from use it may be necessary to increase the tension on the compression springs to further tighten the canvas. This may be done by reversing the compression rod brackets (1844 K) as shown in *Illustr. 20*.

To remove the lower canvas, release the compression rods from the lock brackets (see "H", *Illustrs. 19 and 21*), and pull them forward (see "I", *Illustr. 21*). This releases the compression on the springs and loosens the canvas. The coupler (see "A", *Illustr. 22*) may then be removed through the door provided in the feeder side sheet. See "J", *Illustr. 22*.

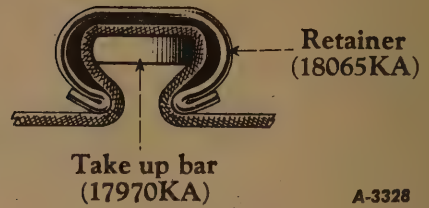
In case shrinkage of feed conveyor canvas occurs, a Feed Conveyor Canvas Extension may be obtained under Ordering Number 25132 K.



## FEEDER CANVASES - Continued

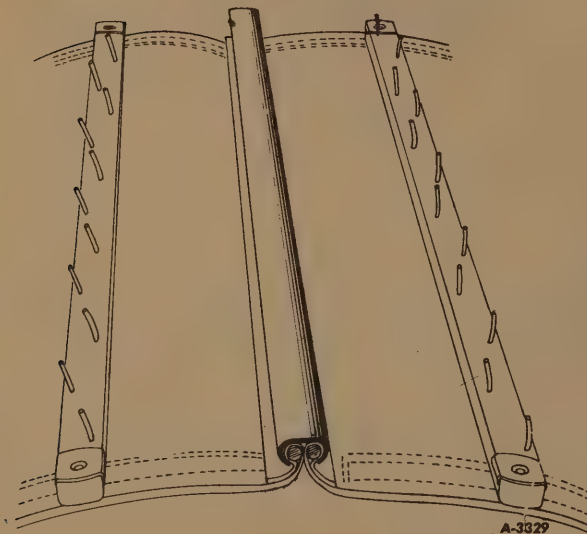


Illustr. 23  
Feeder canvas take-up bar  
and retainer.



Illustr. 24  
Cross - section showing detail  
of take-up bar.

If the canvases have been used a great deal and become stretched beyond the limits of the tighteners, they may be shortened by inserting the flat take-up bar and retainer which are regularly furnished. See Illustrs. 23 and 24.



Illustr. 25  
Feeder canvas end rods and coupler.

Coupler (18065K)



Rod (17969K)

Illustr. 26  
Cross - section showing detail  
of feeder canvas end rods  
and coupler.

## REEL

### REEL SPEED (Ground or Power Drive Reel)

Proper reel speed depends on crop condition. It is important to use the correct reel speed. If the reel speed is too fast it may strike ripe grain with such force that grain will be shattered and lost. If too slow, grain may fall on the cutter bar or ahead of it and be lost, it may be cut up by the knife, or may choke the knife. In down, tangled grain or short straw, the fast speed may be necessary to bring the grain on the feeder canvas.

### REEL SPEED (Power Drive Reel)

The proper drive reel is driven from the small sprocket on the driven pulley jackshaft. See "A", *Illust. 27*.

The reel drive countershaft pulleys (see "B", *Illust. 27*) are driven from the pulley on feed conveyor drive shaft. See "E", *Illust. 27*.

### REEL SPEED CHART (For Machines Equipped with Power Drive Reel)

See *Illust. 27*.

| REEL<br>SPEED | "A"<br>REEL DRIVE JACKSHAFT<br>SPROCKET (DRIVER) |       | "B"<br>REEL DRIVE SPROCKET<br>(DRIVEN) |       |
|---------------|--------------------------------------------------|-------|----------------------------------------|-------|
|               | PART NO.                                         | TEETH | PART NO.                               | TEETH |
| 22 R.P.M.     | 1934 K                                           | 6     | 2021 K                                 | 22    |
| 29 R.P.M.     | 1935 K                                           | 8     | 2021 K                                 | 22    |
| 33 R.P.M.     | 1937 K                                           | 9     | 2021 K                                 | 22    |

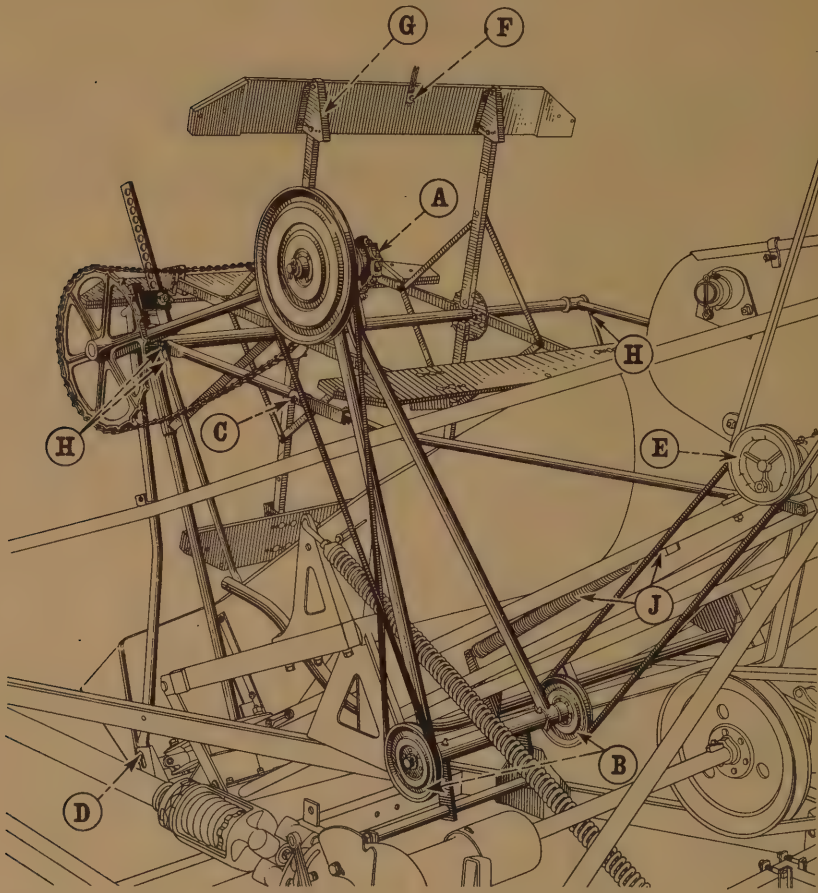
The three reel drive jackshaft sprockets shown in the above speed chart are regularly supplied with the power drive reel.

To change the reel speed from 29 R.P.M. to 22 R.P.M., loosen the reel drive chain. Remove the chain and replace the jack shaft sprocket (see "A", *Illust. 27*) with 6 tooth sprocket (1934-K). Secure it to the jack shaft with a 5/16 x 1-1/2" headed pin and cotter. Remove sufficient chain links so that the chain can be properly tightened. Reassemble the chain and tighten it, as required. See page 23 for instructions covering the tightening of this chain.

To change the reel speed from 22 R.P.M. to 33 R.P.M., loosen the reel drive chain. Remove the chain and replace the jack shaft sprocket (see "A" *Illust. 27*) with 9-tooth sprocket (1937-K). Secure it to the jack shaft with a 5/16 x 1-1/2" headed pin and cotter. Add sufficient links (approximately four) to the drive chain and reassemble the chain on the machine. Tighten it as required. See page 23 for instructions covering the tightening of this chain.

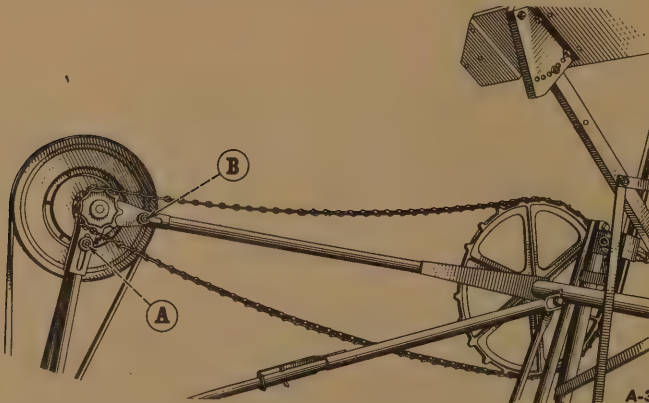


REEL - Continued



A-3331

Illustr. 27 - Reel Drive (for Power Drive Reel).



A-3332

Illustr. 28 - Reel Adjusting arms (for Power Drive Reel).

For instructions, refer to pages 19, 21, and 23.

## REEL - Continued

### REEL SPEED (Ground Drive Reel)

The ground drive reel is driven from a small sprocket on the driven pulley jackshaft. See "A", *Illust. 31*.

The reel drive countershaft sprocket and pulley (see "B", *Illust. 31*) are driven from the sprocket attached to the left main wheel. The speed of the reel is therefore governed by the travel speed of the machine.

### REEL SPEED CHART (For Machines Equipped with Ground Drive Reel)

Showing range of reel speeds which may be obtained by arranging the sprockets as shown on the chart. The reel speeds shown are those for a machine traveling 2-1/2 miles per hour and equipped with the regular 5.50-16 pneumatic tire main wheels.

See *Illust. 30*.

| REEL<br>SPEED | "A"<br>REEL DRIVE AXLE SPROCKET<br>(DRIVER) |       | "B"<br>REEL DRIVE COUNTERSHAFT<br>SPROCKET (DRIVEN) |       |
|---------------|---------------------------------------------|-------|-----------------------------------------------------|-------|
|               | PART NO.                                    | TEETH | PART NO.                                            | TEETH |
| 21 R.P.M.     | 1796 K                                      | 15    | 1790 K                                              | 15    |
| 26 R.P.M.     | 1796 K                                      | 15    | 1789 K                                              | 12    |
| 39 R.P.M.     | 1796 K                                      | 15    | *1786 K                                             | 8     |
| 24 R.P.M.     | *1795 K                                     | 17    | 1790 K                                              | 15    |
| 30 R.P.M.     | *1795 K                                     | 17    | 1789 K                                              | 12    |
| 45 R.P.M.     | *1795 K                                     | 17    | *1786 K                                             | 8     |

\* When a greater speed range is required these sprockets can be obtained on special order.

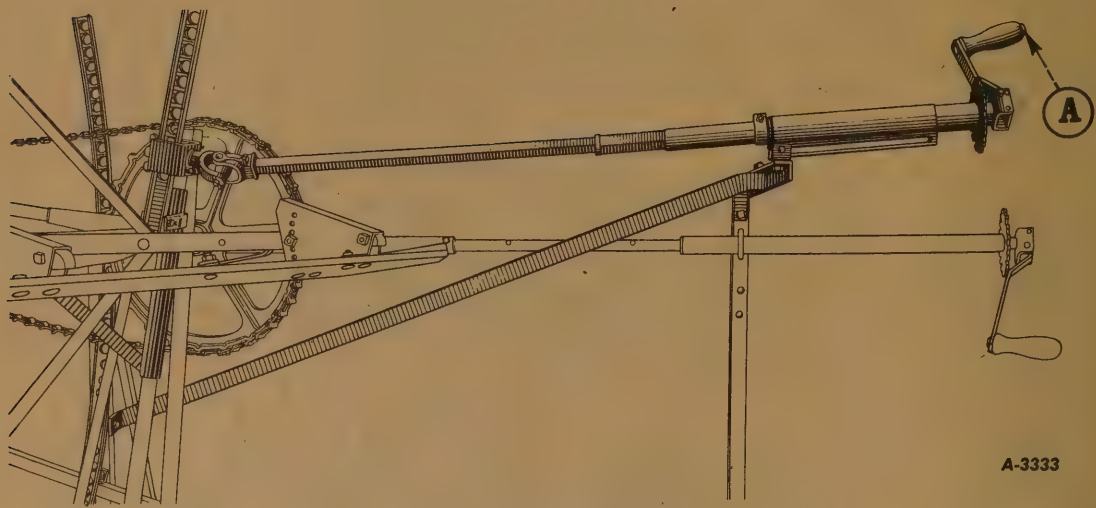
To change the reel drive countershaft sprocket, loosen the lower reel drive chain and replace the twelve tooth countershaft sprocket with the 15-tooth sprocket. Secure it to the countershaft with a 5/16 x 1-1/2" headed pin and cotter. Add sufficient links to the upper drive chain to allow the chain to be tightened properly. Reassemble the chain on the machine and tighten it as required. See page 23 for instructions covering the tightening of this chain.

When the special 8-tooth countershaft sprocket (1786 K) is to be used in place of the 15-tooth sprocket, proceed as above except that sufficient links must be removed from the lower reel drive chain so that the chain may be tightened properly.

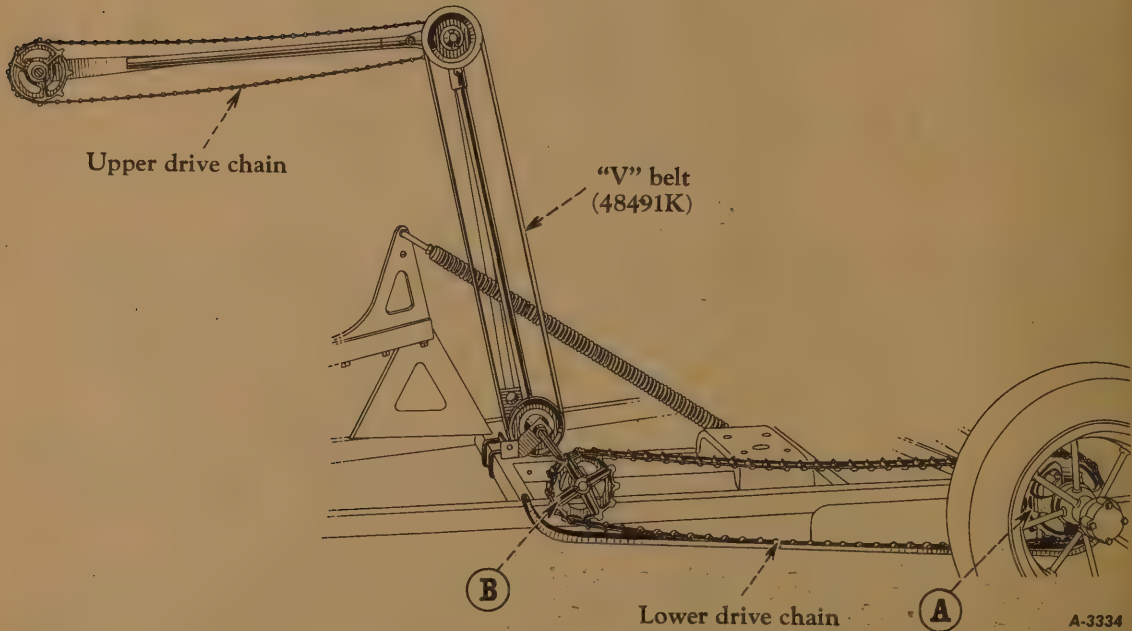
To change the axle sprocket to obtain higher reel speed, remove the lower reel drive chain, the left main wheel hub cap (1783 KA), thrust washers, thrust collar (1784 K) and left main wheel. Replace the 15-tooth sprocket (see "A", *Illust. 30*) with the 17-tooth sprocket (1795 K). Reassemble the wheel, thrust washers, collar and hub cap, as previously found. Add the necessary links to the lower drive chain, then reassemble and tighten the chain as required. See Page 23 for instructions covering the tightening of this chain.



REEL - Continued



Illust. 29 - Reel adjusting crank.



Illust. 30 - Reel drive (for Ground Drive Reel).

For instructions, refer to pages 19, 21, and 23.

## REEL - Continued

*See Illusts. 27, 28, 29, 31, 33 and 34.*

### REEL ADJUSTMENTS (Ground or Power Drive Reel)

The reel may be adjusted forward or backward, up or down, to meet various conditions. The reel may be adjusted up or down from the tractor by means of an adjusting crank (*see "A", Illust. 29*).

For medium and short crops the reel should be adjusted approximately 4" above the cutter bar and far enough forward so that the bats do not leave the grain until it is cut. For taller crops the reel may be set back and raised so that the bats run close to the top of the grain.

To adjust the reel forward or backward, loosen the set screws in the reel adjusting arms front (*see "C", Illusts. 27 and 31*), adjust the reel forward or backward as required, and then retighten set screws.

To level the reel, adjust equalizer links (*see "H", Illusts. 27 and 31*) as desired. Additional adjustment may be made by loosening the bolt that holds reel post brace to slotted hole in pivot bracket (*see "D", Illusts. 27 and 31*), tilting reel as desired and then retightening bolt.

The equalizer springs (*see "J", Illusts. 27 and 31*) should be tightened so that the least effort is required to raise and lower the reel.

The pitch of the reel bats is adjustable (*see "G", Illusts. 27 and 31*). In light, fluffy crops, or in windy conditions, the bats should be set away from the arms at the inside edge so that the bats will press the grain onto the feeder canvas to prevent repeating or throwing grain over the reel.

In conditions where the grain is easily shattered, it may be desirable to set the bats in a more nearly radial position to prevent loss of grain ahead of the cutter bar.

The reel bat hair pins (*see "F", Illusts. 27 and 31*) are provided to improve feeding, especially in grain with long straw, and may be adjusted to suit crop conditions.

The reel may be used with 3, 4 or 6 bats, as desired. *See Illusts. 90 and 92.*

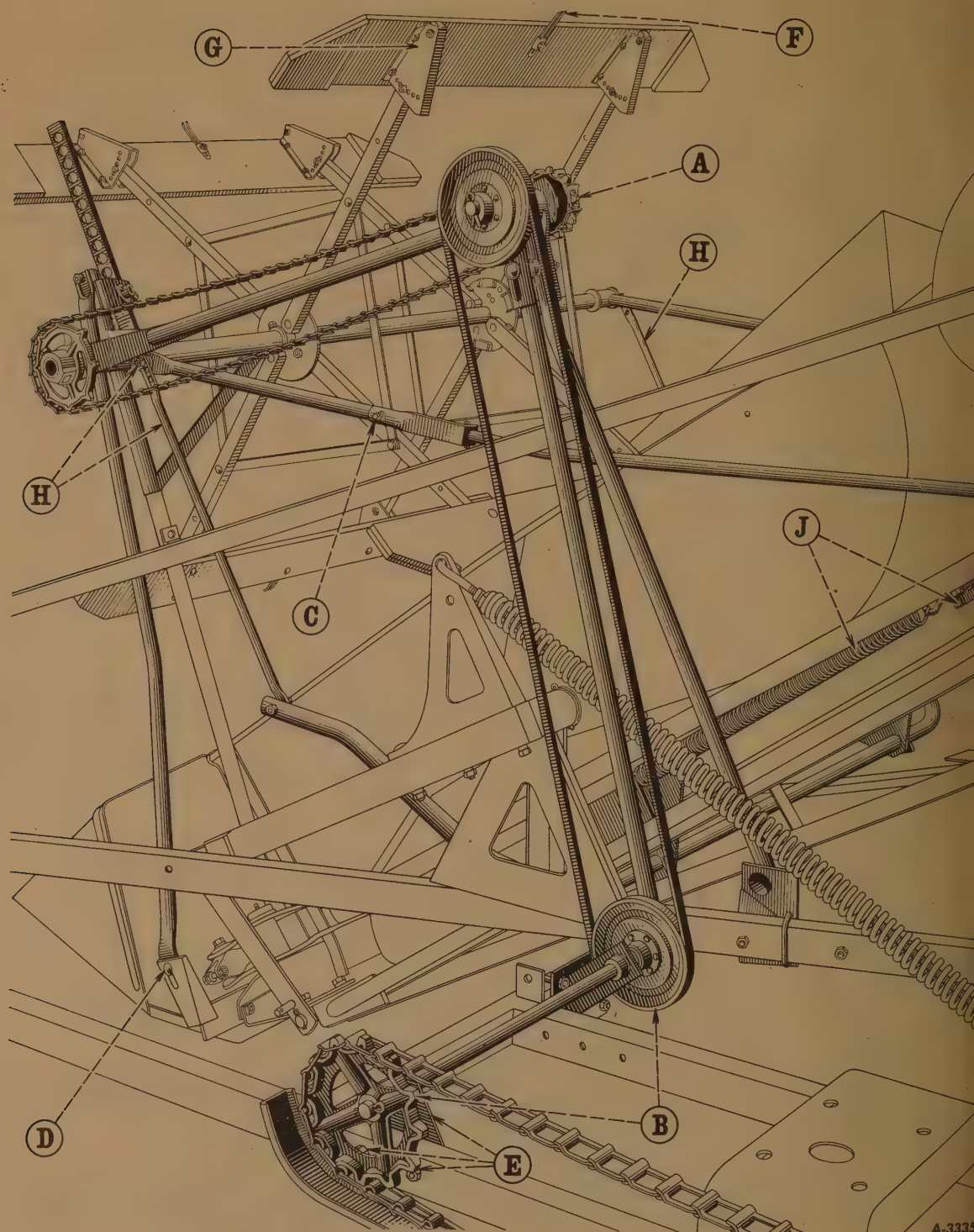
To tighten the reel jackshaft drive belt, loosen the bolt holding the lower spreader arms to the adjusting straps (*see "A", Illust. 28*), adjust jackshaft as required to tighten belt, then retighten bolt.

To tighten the reel drive chain, loosen the bolt that holds upper spreader arm to the adjusting brackets (*see "B", Illust. 28*), adjust spreader pipe as may be required to tighten chain, and then retighten bolt.

To tighten the lower drive chain - for Ground Drive Reel, loosen the bolts in the outer countershaft bearing bracket (*see "E", Illust. 31*), move bracket forward as required to tighten chain, and then retighten bolts.



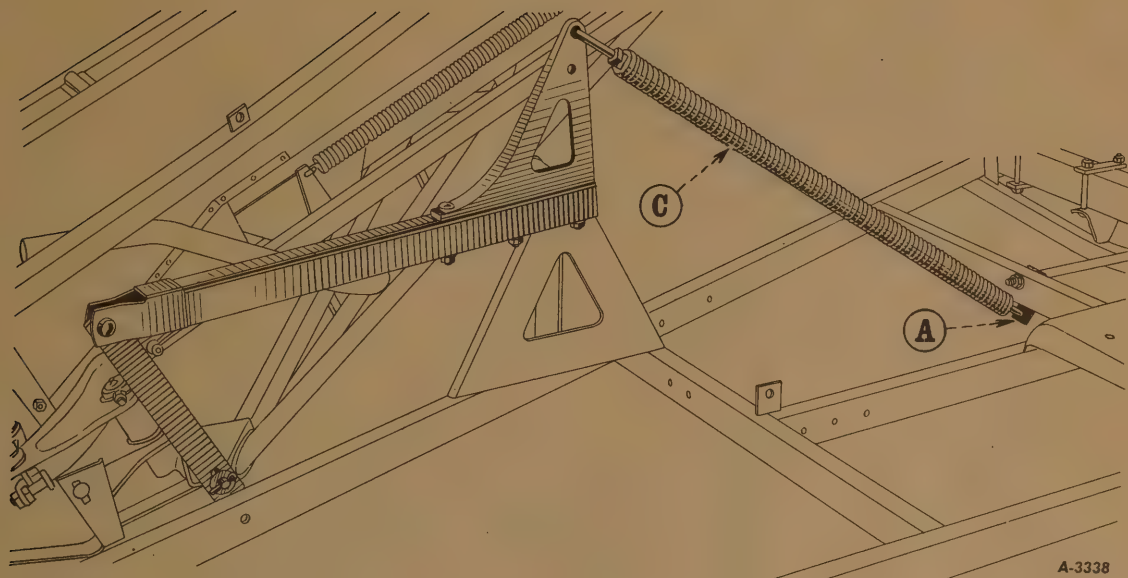
## REEL - Continued



Illustr. 31 - Reel drive, countershaft, etc.  
(for Ground Drive Reel).

For instructions, refer to pages 19, 21, and 23.

## FEEDER BALANCE SPRING



Illust. 32 - Feeder balance spring for Platform Manual Lift.

Balance of the feeder may be regulated by means of the adjusting screw to which the spring is attached. See "A", *Illust. 32*. If the feeder appears to be pulling down heavily on the control pinion, the spring will require tightening.

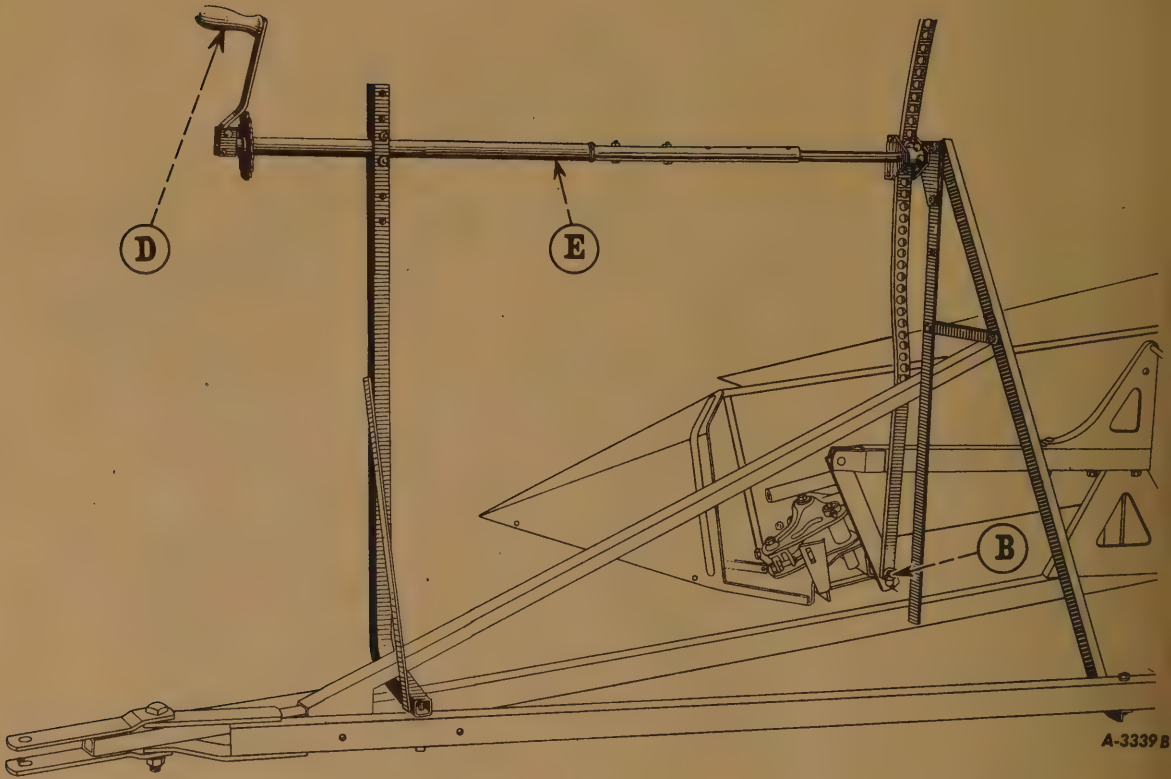
The best way to determine the balance is to disconnect the adjusting rack (see "B", *Illust. 33*), so that the feeder may be moved up and down by hand. The spring may then be adjusted to secure proper balance.

It is important that the balance spring be properly adjusted to prevent excessive loading on the mechanism used to raise or lower the feeder. The spring (see "C", *Illust. 32*) is properly adjusted when very little effort is required to turn the hand crank (see "D", *Illust. 33*), to raise or lower the feeder.

All bearing surfaces must be cleaned of paint when thresher is first set up so all contacting moving surfaces will operate freely without sticking.



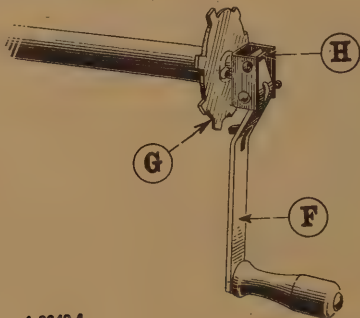
## FEEDER CONTROL



Illust. 33 - Feeder raising and lowering device  
(Platform Manual Lift).

The raising and lowering range of the feeder is regulated by means of a crank located on the front end of the crankshaft. See "D", *Illust. 33*.

The crankshaft is adjustable to meet variations for various tractor positions. The adjustment is made by sliding the shaft to which the crank is attached (see "E", *Illust. 33*) forward or backward, and bolting the shaft in the series of holes which will bring the crank within easy reach of the operator.



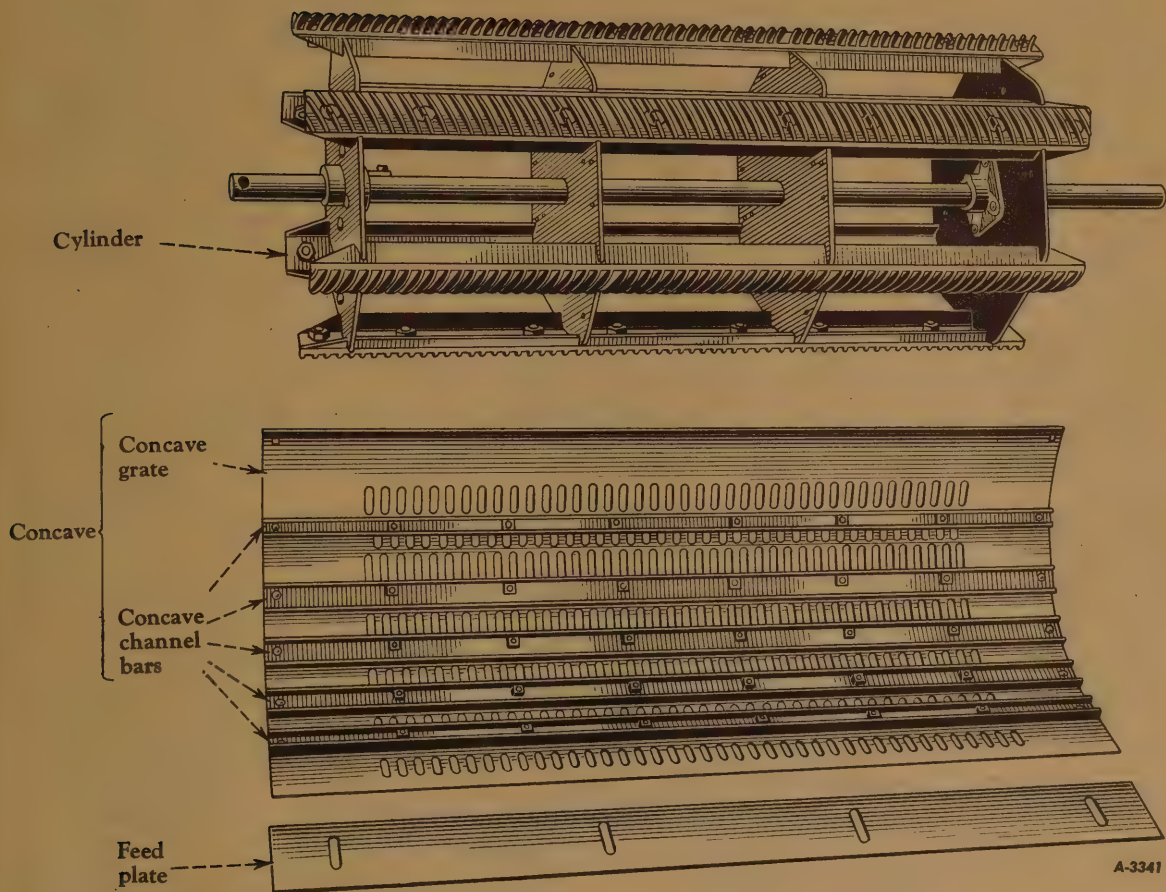
A-3340 A

Illust. 34  
Feeder control crank.

Provision is made whereby the feeder may be made to float. This is done by disengaging raise and lower lock lever "F", from quadrant "G", and using a cotter "H" to lock the lever, as shown in *Illust. 34*.

This is particularly desired when the Pickup Attachment is used, as it will allow the feeder to float; also when cutting extremely low so that the feeder may follow the unevenness of the ground and thus prevent any damage when abrupt rises in the field are encountered.

## CYLINDER AND CONCAVE GRATE



Illustr. 35 - Cylinder, concave grate and feed plate.

The cylinder is equipped with corrugated steel bars operating in conjunction with channel steel concave bars bolted to the perforated grate.

Five steel channel concave bars are regularly supplied with the concave.



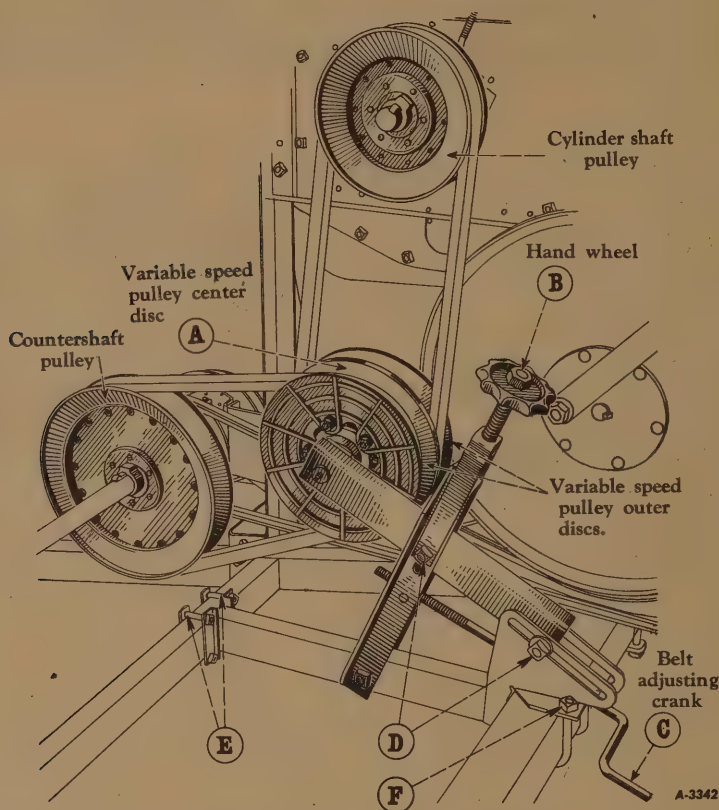
## CYLINDER DRIVE

See *Illusts. 36, 37, and 38.*

The cylinder is driven from the main drive countershaft through a variable speed device by means of two "V" belts.

The drive is independent of the separator and feeder drives which makes it possible to change cylinder speeds without the purchase of additional parts to maintain a uniform speed of all other drives.

The center portion of the double pulley (see "A", *Illust. 36*) is mounted between the two outer pulley discs. When moved to the right or left, it increases the diameter of one pulley and decreases the other correspondingly. Movement of the center portion is controlled by the hand wheel "B", as shown in *Illust. 36*.



**Illust. 36 - Cylinder variable speed changing device.**

**CAUTION!** Be sure the variable speed pulleys are properly lined up with the cylinder and countershaft pulleys. **THIS IS IMPORTANT!** If pulleys are not in line, a side pull develops which concentrates the load on one side of the pulley discs and belts, resulting in excessive wear on the belts, pulleys and speed changing mechanism.

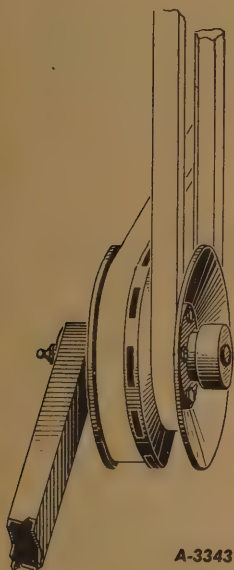
**TO LINE UP THE CYLINDER DRIVE PULLEYS** loosen the nuts on clamp bolts holding speed changing pulley support to "A" frame. See "E" and "F", *Illust. 36*. Slide the support sideways as may be required to line up the pulleys, and retighten nuts "E" and "F".

## CYLINDER DRIVE - Continued

See *Illusts. 36, 37, and 38.*

TO CHANGE CYLINDER SPEED, loosen the nuts holding the pulley support arm, also the adjusting yoke (see "D", *Illust. 36*). Then, turn hand wheel "B" to the RIGHT to increase the speed or to the LEFT to decrease the speed, as indicated by the arrow on hand wheel "B". BE SURE TO RETIGHTEN NUTS "D", AFTER MAKING CYLINDER SPEED ADJUSTMENTS.

It should be remembered, however, that the limit of adjustment either way is reached when the center plate "A" touches either of the side discs. CAUTION! Any further adjustment beyond these limits will only loosen one belt beyond the limits of proper tightness or tighten the other too much which might spring the shafts or seriously damage other working parts of the speed changing device.

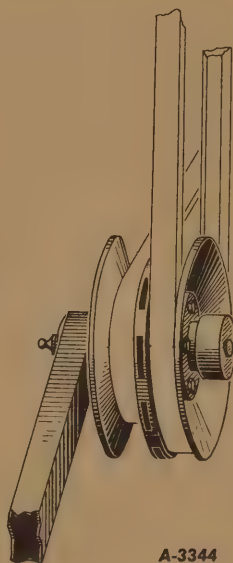


A-3343

**Illust. 37**  
Speed change device  
in slow speed position.

The cylinder drive belts should always be adjusted for proper tension after changing cylinder speeds. DO NOT RUN THESE BELTS TOO TIGHT. The proper tension is obtained when the belts can be depressed, without effort, about 1/2" to 3/4" between the pulleys. The crank "C" tightens the belts.

If the machine is standing idle for a long period of time, be sure to oil the spacers in center plate "A", also the hand wheel screw and belt tightener screw. The speed changing mechanism will not function properly if these spacers are not smooth and free from rust.



A-3344

**Illust. 38**  
Speed change device  
in fast speed position.

## CYLINDER SPEED

See *Illusts. 36, 37, and 38.*

The cylinder is one of the most important parts of the thresher. Its function is to rub all the grain out of the heads. Its speed should be just enough to thresh clean. If the speed is too low, it will not thresh clean. If the speed is too high, there is danger of cracking grain.

The normal cylinder speed when threshing is generally within the range of 1150 R.P.M. to 1450 R.P.M.



## CYLINDER SPEED - Continued

See *Illusts. 36, 37, and 38.*

The efficiency of threshing depends largely on the cylinder speed. The proper speed depends entirely on the condition of the grain. In the early part of the day when the grain is still a little tough, a slightly higher cylinder speed is essential to do the most efficient job of threshing; later in the day when the grain is dry, a lower cylinder speed may be more desirable to avoid cracking grain.

With the variable speed device and cylinder drive pulleys regularly furnished (*see Illusts. 36, 37, and 38*) the speed range of the cylinder may be quickly adjusted anywhere from 975 R.P.M. up to 1700 R.P.M. for threshing the common varieties of grain and seeds such as wheat, rye, oats, barley, flax, clover, alfalfa, timothy and many varieties of grasses by loosening nuts "D" (*shown in Illust. 36*) and turning hand wheel "B" to the RIGHT to increase the speed or to the LEFT to decrease the speed.

The cylinder and countershaft pulleys are also interchangeable which makes it possible to obtain a range of speeds from 680 R.P.M. down to 400 R.P.M. for threshing peas, vetch, beans and soy beans, by reversing the drive pulleys. Cylinder speeds ranging from 525 R.P.M. to 1400 R.P.M. may also be obtained by using sheave 18329 K (furnished on special order) on the countershaft and by using either the 8-3/4" or 12-1/2" diameter pulleys (regularly furnished) on the cylinder shaft.

Since the intermediate cylinder speed range is seldom required except for special seed crops, the chart on pages 78 and 79 showing approximate cylinder speeds required for various seeds and grains should be used as a guide when intermediate cylinder speeds are required.

NOTE! Cylinder speeds referred to are threshing speeds under load (not idle). Idle speeds are somewhat higher.

Cylinder speed should be checked under load with a speed indicator since it is always possible that the tractor engine speed may have been changed for previous operation.

CYLINDER SPEEDS ARE BASED ON TRACTOR POWER TAKE-OFF SPEED OF 540 R.P.M.

CHART SHOWING CYLINDER SPEED RANGE

| Speed Range |             | Pulleys Used             |                         |
|-------------|-------------|--------------------------|-------------------------|
| Low Speed   | High Speed  | Cylinder Shaft Pulley    | Countershaft Pulley     |
| 285 R.P.M.  | 515 R.P.M.  | \$21056 K - 15-1/8" Dia. | \$21058 K - 7-1/8" Dia. |
| 400 R.P.M.  | 680 R.P.M.  | *16990 K - 12-1/2" Dia.  | *16989 K - 8-3/4" Dia.  |
| 470 R.P.M.  | 800 R.P.M.  | †18329 K - 10-7/8" Dia.  | *16989 K - 8-3/4" Dia.  |
| 525 R.P.M.  | 915 R.P.M.  | *16990 K - 12-1/2" Dia.  | †18329 K - 10-7/8" Dia. |
| 740 R.P.M.  | 1300 R.P.M. | †18329 K - 10-7/8" Dia.  | *16990 K - 12-1/2" Dia. |
| 830 R.P.M.  | 1400 R.P.M. | *16989 K - 8-3/4" Dia.   | †18329 K - 10-7/8" Dia. |
| 975 R.P.M.  | 1700 R.P.M. | *16989 K - 8-3/4" Dia.   | *16990 K - 12-1/2" Dia. |

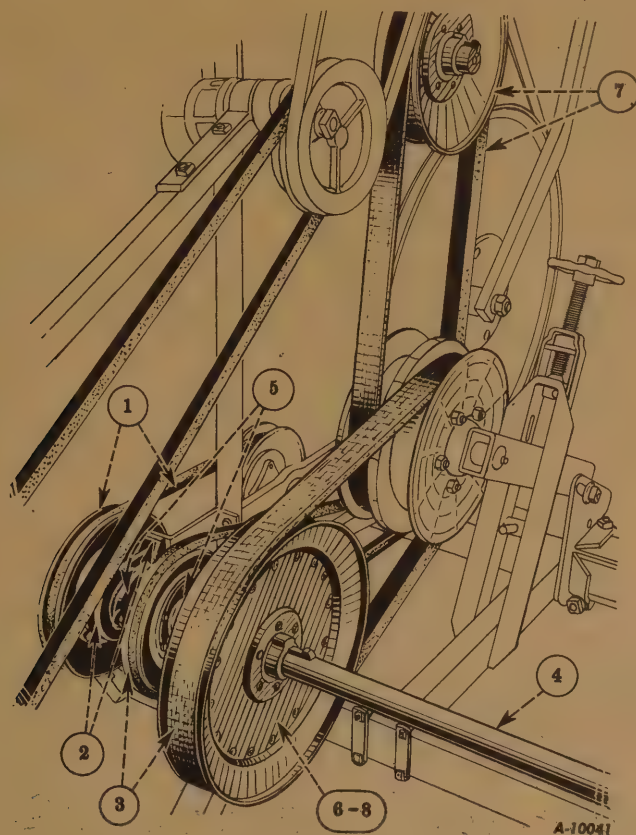
\* - Regular.

† - Special.

§ - Furnished with special slow speed for edible beans (cannot be reversed).

## CYLINDER SPEED - Continued

## INTERCHANGING OF CYLINDER AND COUNTERSHAFT DRIVE PULLEYS



Illust. 39 - Main drive countershaft and bearing support.

When it is desired to interchange the pulley on the cylinder shaft with the corresponding pulley on the countershaft, proceed as follows:

1. Remove the fan pulley and drive belt.
2. Remove the "U" bolt and pillow block.
3. Loosen the separator drive belt and countershaft drive belt and remove them from the pulleys on countershaft.
4. Slide the countershaft towards the fan housing until the couplings at left end of the shaft are discontinued then remove the countershaft from the machine.
5. Remove the countershaft bearing box, bearing and separator drive pulley from the countershaft.
6. Remove the cylinder pulley from the countershaft.
7. Remove the cylinder drive belt from the cylinder pulley on cylinder shaft and replace pulley with the corresponding one removed from the countershaft. Reassemble the belt.
8. Assemble the cylinder pulley, removed from the cylinder shaft, on the countershaft in the same position in which the corresponding pulley was found. Secure the pulley with gib key.

Reassemble balance of parts removed from machine in exactly the same manner in which they were found previously.



## CYLINDER SPEED - Continued

### INTERCHANGING OF CYLINDER AND COUNTERSHAFT PULLEYS - Continued

**IMPORTANT!** After the cylinder and countershaft pulleys have been re-assembled on the machine, be sure to line up the cylinder and countershaft pulleys properly with the variable speed pulleys. If the pulleys are not in line, a side pull develops which concentrates the load on one side of the pulley discs and belts, resulting in excessive wear on the belts, pulleys and speed changing mechanism.

The cylinder drive pulleys may be lined up by sliding the variable speed support tube sideways as may be required to line up the pulleys, then tighten the clamp bolts and "L" bolts that hold the support tube to the "A" frame.

After all pulleys are properly lined up, tighten all belts, as required. *Instructions for the tightening of belts are found under "Belting" on pages 10 and 11.*

## CYLINDER ADJUSTMENT

The cylinder shaft is mounted on ball bearings carried in sliding brackets which are fitted with adjusting screws (*see "G" and "H", Illust. 40*), which permit accurate and easy adjustment of the cylinder with reference to clearance between concave and cylinder bars. **NOTE!** The concave is stationary; the necessary adjustment is made by raising or lowering cylinder.

To raise the cylinder for more clearance between concave and cylinder bars, loosen the bolts holding the sliding brackets to the side sheet. *See "C", Illust. 40.* Loosen the nuts on the cylinder adjusting screws (*see "B", Illust. 40*), raise cylinder at both ends, as required, and retighten nuts on adjusting screws; then tighten the bolts holding the sliding brackets. Be sure the clearance is the same at both ends. (*See chart on pages 78 and 79 for approximate clearance required for various grains and seeds.*)

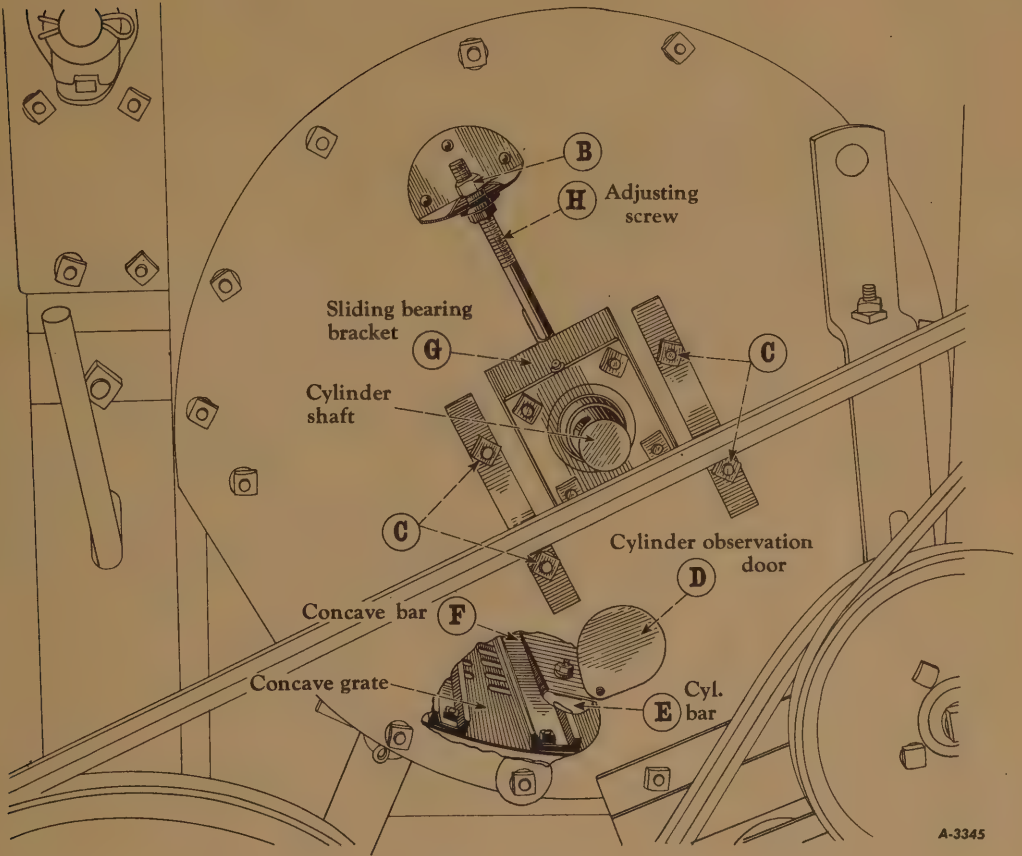
When adjusting the cylinder, the clearance should be measured with a gauge, not by eye. A cylinder clearance gauge can easily be made from old hack saw blades by breaking the blades in the middle and grinding off the teeth. A hand hack saw blade is about  $1/32$ " thick, so 20 to 24 pieces of blades should be fastened together by a rivet or cotter pin through the hole in the ends of the blades.

Observation doors are provided on both sides through which the operator may quickly determine the proper clearance required. *See "D", Illust. 40.*

Clearance should always be checked between the closest point between the cylinder bar and concave channel bar. *See "A", Illust. 41.*

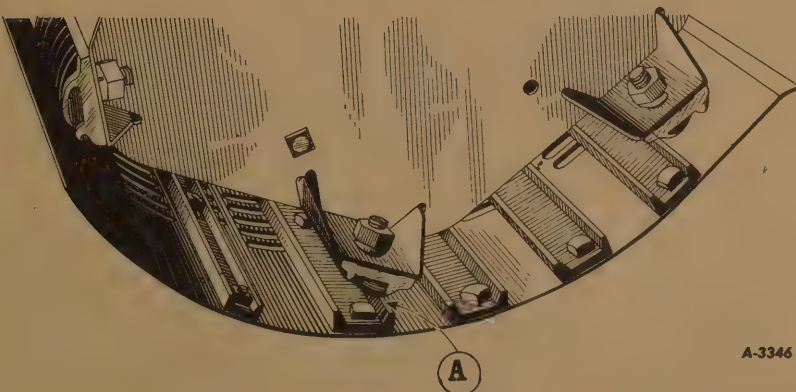
The correct cylinder adjustment for any given kind of grain must be determined by trial. When set too close, cracking will result; if too far apart it will not thresh clean. For average conditions, the high limit gives best results and at the same time reduces to a minimum the power required to thresh.

## CYLINDER ADJUSTMENT - Continued



Illustr. 40

Correct position of cylinder bar "E", over concave channel bar "F", at the observation door when measuring clearance between cylinder and concave bar.



Illustr. 41

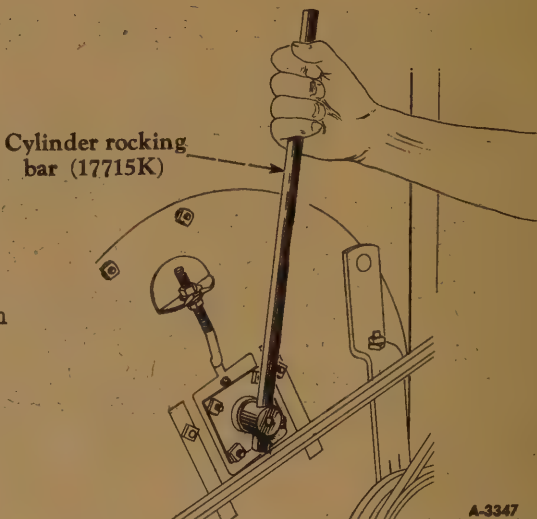
Adjustment of cylinder with relation to concave channel bar.



## CHOKED CYLINDER

In case of a choked cylinder, clear the feeder of all straw. Then rock the cylinder back and forth by means of the rocking bar. See *Illustr. 42*. If choking is not relieved by this method, raise the cylinder by means of the adjusting screws and rock the cylinder to loosen the choke before applying power.

**CAUTION!** Be sure to readjust the cylinder to its original position after the choke has been cleared.



*Illustr. 42* - Cylinder rocking bar.

## REPLACING DAMAGED CYLINDER BARS

Cylinder bars may be ordered in complete sets, or in pairs.

The ordering numbers are:

18826 K Set of bars  
Consisting of:

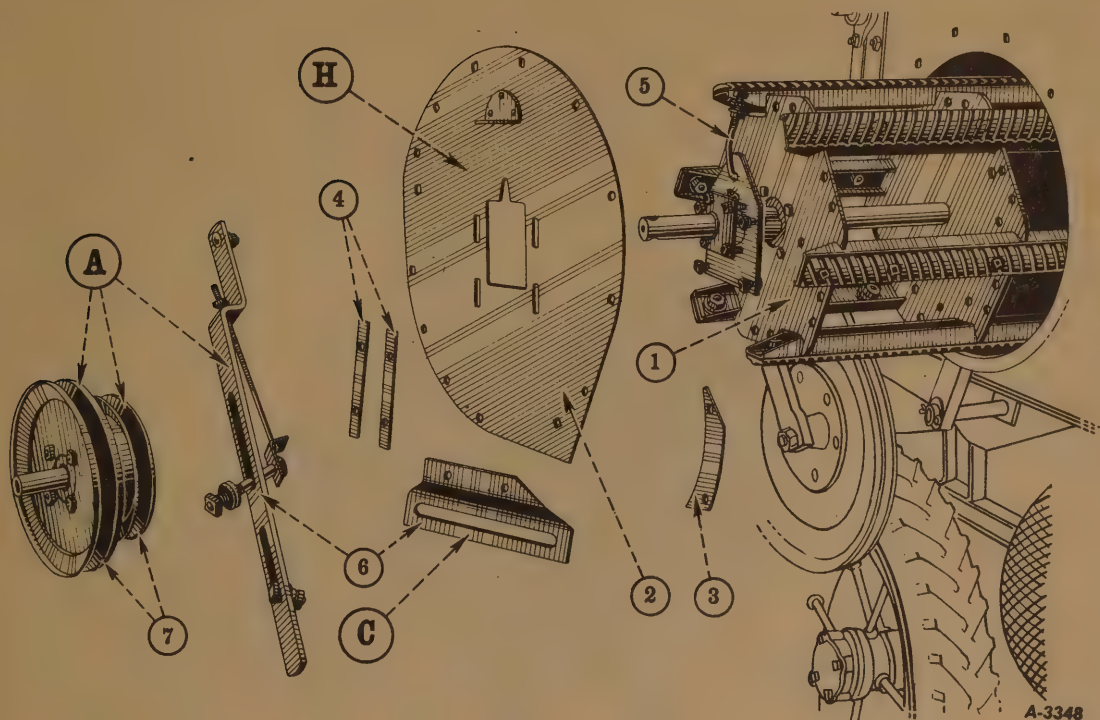
Three 18680 K Bar, left.  
Three 18681 K Bar, right.

21903 K Pair of bars  
Consisting of:

One 18680 K Bar, left.  
One 18681 K Bar, right.

**IMPORTANT!** When one cylinder bar becomes damaged, the cylinder bar located directly across from the one damaged must also be replaced in order to maintain proper balance of the cylinder. However, when it is necessary to replace a cylinder bar that shows considerable wear, it is advisable to install a complete set of six bars rather than a set of two. The two new bars would be considerably higher than the used ones and would cause poor threshing due to the fact that the cylinder bars would not have the same concave clearance.

# TO REMOVE THE CYLINDER



Illustr. 43

Parts to be detached when removing cylinder from right side of machine.

Remove cylinder drive belt and drive pulley (on left side of machine). See Illustr. 12.

Remove upper and lower feeder drive belts. See Illustr. 13.

Remove feeder drive belt tightener arm with pulleys. See "A", Illustr. 43.

Remove tightener arm adjusting bracket. See "C", Illustr. 43.

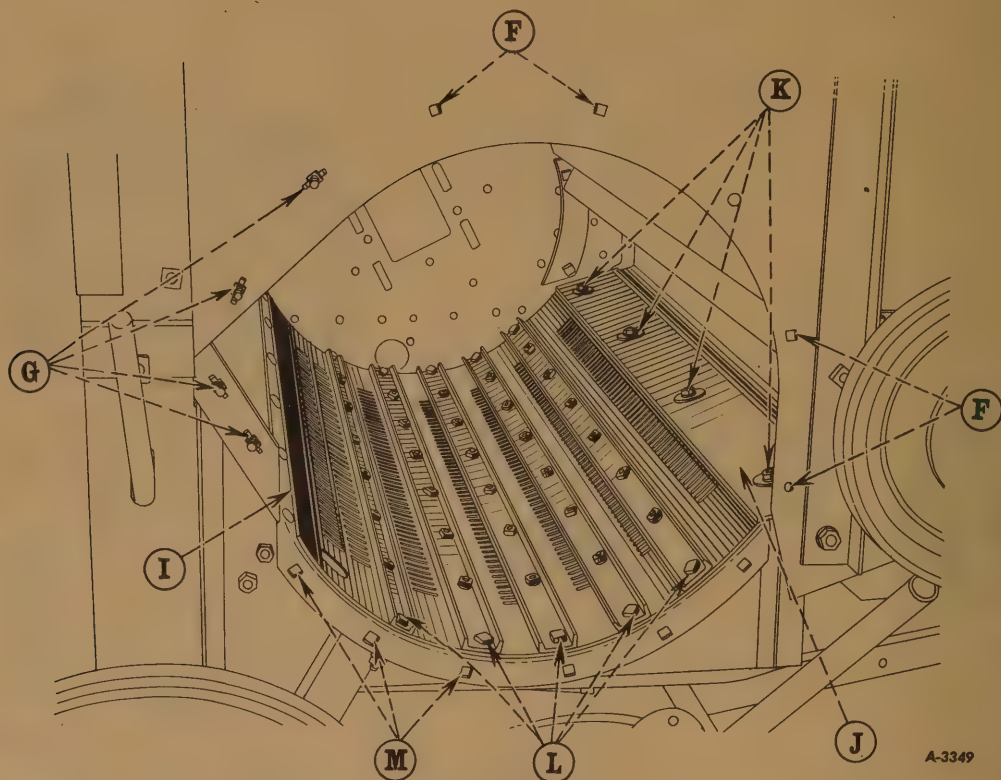
Loosen the nuts on cylinder adjusting screws (on both sides of machine) and detach screws from adjusting brackets. See "B", Illustr. 40.

Open upper feeder door and raise upper feeder canvas frame. See "D", and "E", Illustr. 45. CAUTION! Be sure to lock the frame in place with door retainer clips.

Continued on page 36.



## TO REMOVE THE CYLINDER - Continued



Illustr. 44 - Concave.

Remove four front bolts in cylinder end plate by reaching through feeder top door. See "F", *Illustr. 44*.

Remove nuts and lockwashers from the four rear bolts in cylinder end plate. See "G", *Illustr. 44*.

Remove three lower bolts in cylinder end plate. See "M", *Illustr. 44*.

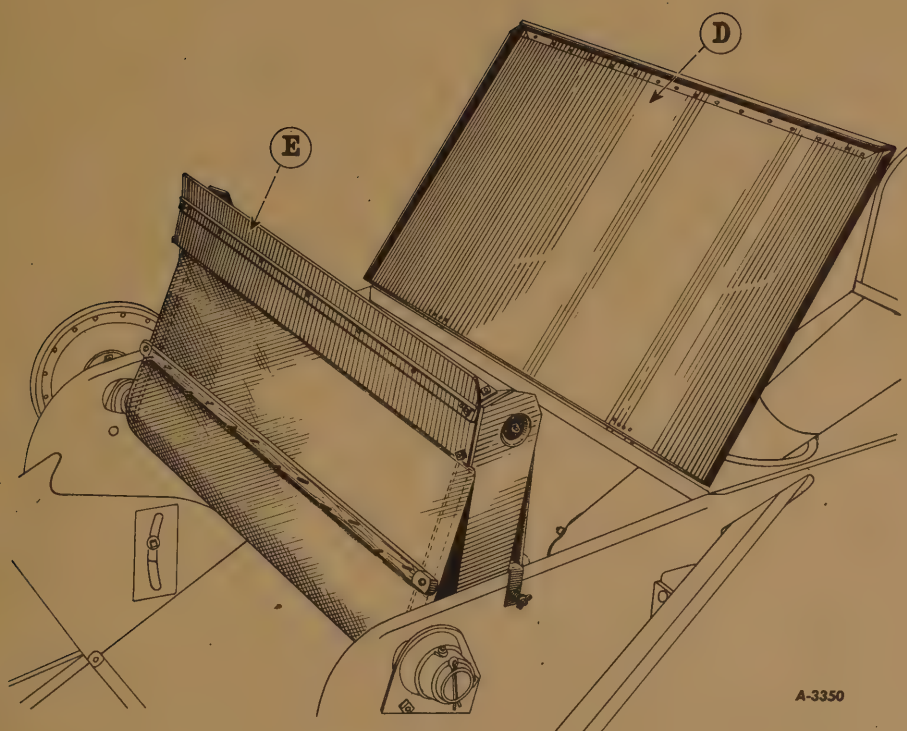
Remove four bolts holding the cylinder bearing bracket to end sheets (on both sides of machine). See "C", *Illustr. 40*.

Remove cylinder end plate. See "H", *Illustr. 43*.

The cylinder may now be pulled out and removed as shown in *Illustr. 43*.

To reassemble cylinder into machine, see instructions on page 38.

## TO REMOVE THE CYLINDER - Continued



A-3350

Illustr. 45

Feeder top door and upper feeder canvas frame.

*For instructions, refer to pages 35 and 36.*



## TO REMOVE THE CYLINDER - Continued

When changing concave grates, remove concave as follows:

Remove the four cap screws holding the feed plate. See "K", *Illust. 44*.

Remove five bolts (on each side) holding the concave to support plate.  
See "L", *Illust. 44*.

The concave may now be removed.

Reassemble parts into the machine in the following order:

Concave. See "I", *Illust. 44*.

Feed plate. See "J", *Illust. 44*.

Assemble the cylinder into the machine in the following order (see *Illust. 43*).

1. Cylinder.
2. Cylinder end plate.
3. Cylinder end shield, right.
4. Cylinder bolt hole covers.
5. Cylinder adjusting screws.
6. Tightener arm and bracket.
7. Tightener pulleys.
8. Feeder belts (see *Illust. 13*).
9. Cylinder drive pulley and key (on left side) (see *Illust. 12*).
10. Cylinder drive belt (on left side) (see *Illust. 12*).

## CONCAVE GRATE

The perforated grate (see "I", *Illust.* 44) is removable and may be interchanged with special grate sections having larger or smaller openings, or a blank sheet as may be required for threshing special seed crops.

The concave grate having  $1/4 \times 1$ " slotted openings (17139 K) is regularly furnished with each machine.

The following special grates may be obtained on special order:

17140 K -  $5/32 \times 3/4$ " Slotted Openings.

17141 K -  $5/16 \times 1-1/4$ " Slotted openings.

17142 K -  $3/8 \times 1-1/4$ " Slotted openings.

18427 K - Blank (no holes).

21188 K -  $5/8 \times 1-1/4$ " Slotted openings.

*Refer to chart on pages 78 and 79 for type of grate used for threshing various seeds and grains.*

### TO CHANGE THE CONCAVE

The concave may be removed from the machine without removing the cylinder, when changing grates from one type to another.

### TO REMOVE THE CONCAVE

Open the feeder top door and raise the upper feeder canvas frame as shown in *Illust.* 45.

Remove four cap screws holding the feed plate. See "K", *Illust.* 44.

Remove two lower bolts holding cylinder end shields to separator sides. See "F", *Illust.* 44.

Remove the nuts and lock washers from the bolts holding concave to support plate (5 bolts on each side). See "L", *Illust.* 44.

Drive the bolts upward to free the concave; then raise and remove it through the feeder top door.



## CONCAVE GRATE - Continued

### TO REASSEMBLE THE CONCAVE GRATE INTO THE MACHINE

After the concave bars have been removed from the old concave grate and bolted to the new one, *as shown in Illust. 35*, slide the new concave assembly under the cylinder through feeder top door, push the concave rearward and at the same time raise the front end slightly to allow the locating clips to slide under the concave grate supporting plate, through the slotted holes.

Replace the bolts (five on each side) through feeder top door by reaching through the cylinder. *See "L", Illust. 44.*

Replace feed plate and secure in place with four cap screws, lock washers and flat washers. *See "J" and "K", Illust. 44.*

Replace two lower bolts holding the cylinder end shields. *See "F", Illust. 44.*

## FEED PLATE

The holes in the feed plate are slotted; this permits easy adjustment forward or backward, for proper clearance between the cylinder bars. *See Illust. 35.*

### TO ADJUST THE FEED PLATE

Open the upper feeder door and raise upper feeder canvas frame *as shown in Illust. 45.*

Loosen the four cap screws (*see "K", Illust. 44*); adjust the feed plate forward or backward as required and retighten cap screws.

When adjusting the feed plate, use the cylinder clearance gauge. Do not guess by eye. Be sure the clearance is the same at both ends; **THIS IS IMPORTANT**; always measure the clearance at the closest point between the feed plate and cylinder bar.

*Refer to chart on pages 78 and 79 for approximate feed plate clearance required for threshing various seeds and grains.*

If the machine has had a great deal of use so that the feed plate is badly worn or uneven, it may be reversed, thereby obtaining a new threshing edge.

## SEPARATING AND CLEANING

*See Cutaway View on pages 82 and 83.*

The parts comprising the separator include the cylinder beater, straw rack, return pan and check flap.

The major part of the separation takes place at the concave underneath the cylinder. The loose grain falls through the perforated concave grate to the grain pan where it is delivered to the cleaning sieves. The straw then passes over the beater grate where the cylinder beater knocks out loose kernels carried over with the straw from the cylinder. The straw then falls on the straw rack where it is agitated, allowing any remaining kernels to be sifted out, fall through on the return pan and be delivered to the rear end of the grain pan.

The check flaps stop grain which might otherwise be thrown out of the rear of the machine by the cylinder or beater.

The upper check flap is equipped with a chain, extending through the separator cover, for the purpose of adjusting the flap. The function of this flap is to retard the straw coming onto the rack and hold it for a moment in order to remove any grain carried over in the straw from the cylinder. It is important that this flap be adjusted properly so that it will not retard the straw too long, causing an excess to penetrate the rack and overload the chaffer and shoe sieve. For average and light crops the flap can be in the low position.

### SEPARATOR DRIVE

The feeder, cylinder beater, straw rack, grain pan with chaffer, cleaning shoe and elevators are driven from the center pulley on the main drive countershaft. The fan is driven from the inner pulley on the main drive countershaft. *See Illust. 12.*

The regular speeds of these units are as follows:

|                                             |                    |
|---------------------------------------------|--------------------|
| Main drive countershaft . . . . .           | 826 R.P.M.         |
| Lower feeder canvas drive roller. . . . .   | 404 R.P.M.         |
| Upper feeder canvas drive roller. . . . .   | 490 R.P.M.         |
| Cylinder beater . . . . .                   | 589 R.P.M.         |
| Separator drive {Straw rack                 | . . . . 249 R.P.M. |
| {Grain pan with chaffer}                    |                    |
| {Cleaning shoe}                             |                    |
| Fan . . . . .                               | 900 to 1100 R.P.M. |
| Clean grain and tailings elevators. . . . . | 251 R.P.M.         |

### REMOVING SEPARATOR SIDE DOOR

When it is desired to remove separator side door, slots are provided for the screws at the front end of the door and key slotted holes are used in the separator side door for the rear screws. Loosen the slotted head screws (do not remove screws), then slide the door rearward until the screws are in the round holes of the key slots in the separator side door; then swing the door forward and downward; this can be done without disconnecting the door from the grain check canvas support rod.

### REMOVING SEPARATOR COVER PLATE

To remove the separator cover plate, loosen the bolts holding the cover, then swing cover clockwise about 1/2"; cover plate can then be readily removed.

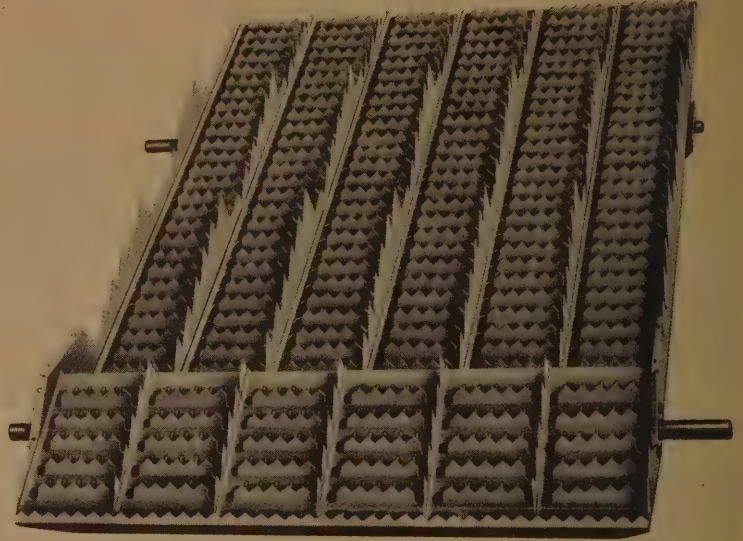
## STRAW RACK

## SEPARATING AND CLEANING - Continued

The straw rack is equipped with removable riser rods in the front and rear sections. Any number of these rods may be removed by pulling them out through the holes at the rear ends of the riser sections.

If wastage over the straw rack occurs, it may be corrected by removing some of these rods. In extreme cases it may be necessary to remove all the rods.

In conditions when straw and other material chops up fine, or in flax, it may be found necessary to replace the rods to avoid overloading the chaffer and shoe sieve with too much chaff.

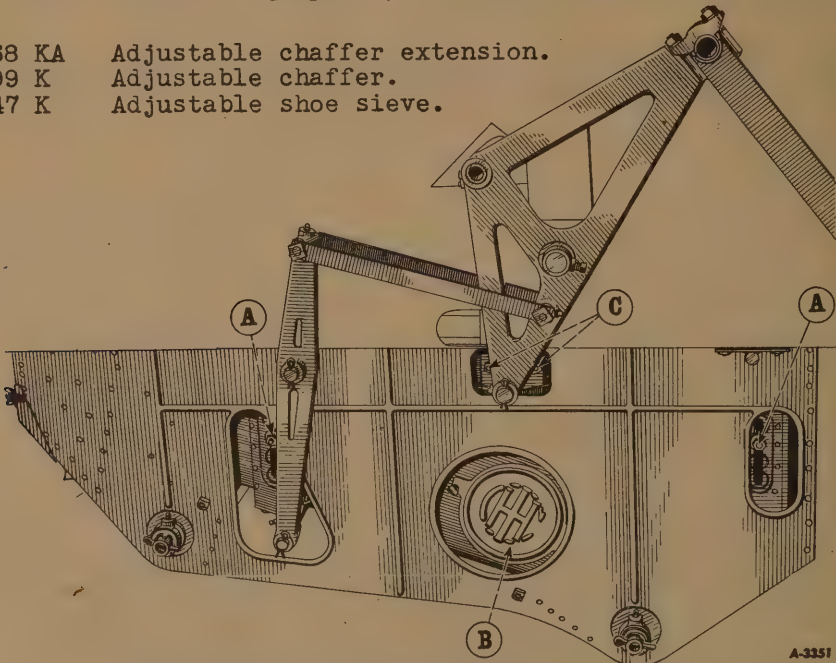


Illustr. 46 - Straw Rack.

## FAN AND SHOE

The cleaning apparatus consists of the fan, chaffer, chaffer extension and shoe sieve. The full equipment, as supplied with each machine is as follows:

- |          |                               |
|----------|-------------------------------|
| 17368 KA | Adjustable chaffer extension. |
| 19399 K  | Adjustable chaffer.           |
| 16747 K  | Adjustable shoe sieve.        |



A-3351

Illustr. 47 - Shoe and Conveyor Troughs.

The shoe is suspended underneath the grain pan and chaffer on rocker type hangers. See Illustr. 47. The shaking action of the shoe operates in direct opposition to the grain pan and chaffer, that is, when the grain pan and chaffer move forward the shoe moves rearward, which assures double cleaning action, first, on the chaffer where coarse material and chaff are removed, and secondly, in the cleaning shoe where final cleaning takes place.



## FAN AND SHOE - Continued

The fan is equipped with adjustable wind regulators, located on ends of the fan drum which regulate the air blast. The regulators are controlled by means of the adjusting lever located between the elevators. See *Illust. 48*.

The amount of air required for good cleaning is determined by observing what comes over the chaffer extension. The blast should be strong enough to "lift" the chaff from the chaffer and shoe sieve but not enough to blow grain over. If good grain comes over, it is probable the blast is too strong. It should be reduced by closing the wind regulators on ends of fan drum. It is also probable that the chaffer and extension should be opened slightly more. For oats, the wind or blast should naturally be less than for wheat, and the chaffer and shoe sieve opened more.

For light seed crops it may be necessary to reduce the speed of the fan. This may be accomplished by removing shims from the pulley on the fan shaft and adding shims to the fan drive pulley on the countershaft. The regular speed of the fan is approximately 900 R.P.M.

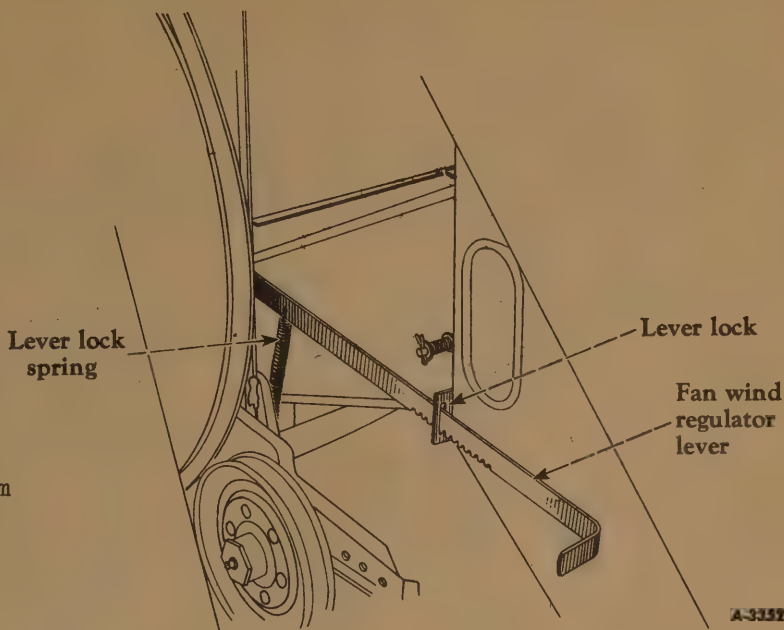
The fan wind deflector, located in throat of fan housing, is adjustable. For average conditions, the adjusting rod (see *Illust. 49*) may be set in the second notch.

If good grain is being carried over with the chaff, after the chaffer shoe sieve and wind regulators have been properly adjusted, the adjusting rod should be set in the lower notch to deflect the air to the front of the chaffer and shoe sieve.

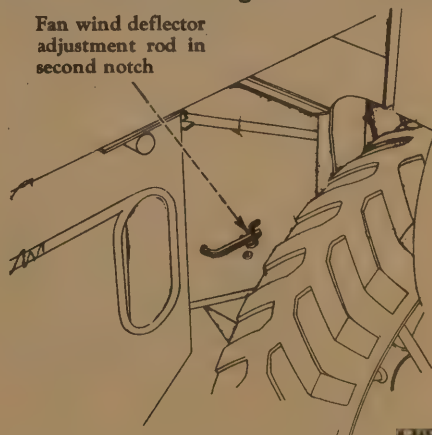
Loss of grain over the shoe is usually caused by lack of wind which does not "lift" the chaff enough to allow the grain to fall through the chaffer, thus allowing the grain to be carried over.

The adjustable tail board at the rear end of the shoe (see *Illust. 51*) should always be set as near the chaffer extension as possible to prevent grain from being blown out.

To adjust the tail board, turn the cylinder by hand, using the rocking bar, until the shoe is in its lowest position; loosen the wing nuts and set tail board about 1/4" below the chaffer extension; then secure in place by retightening the wing nuts.

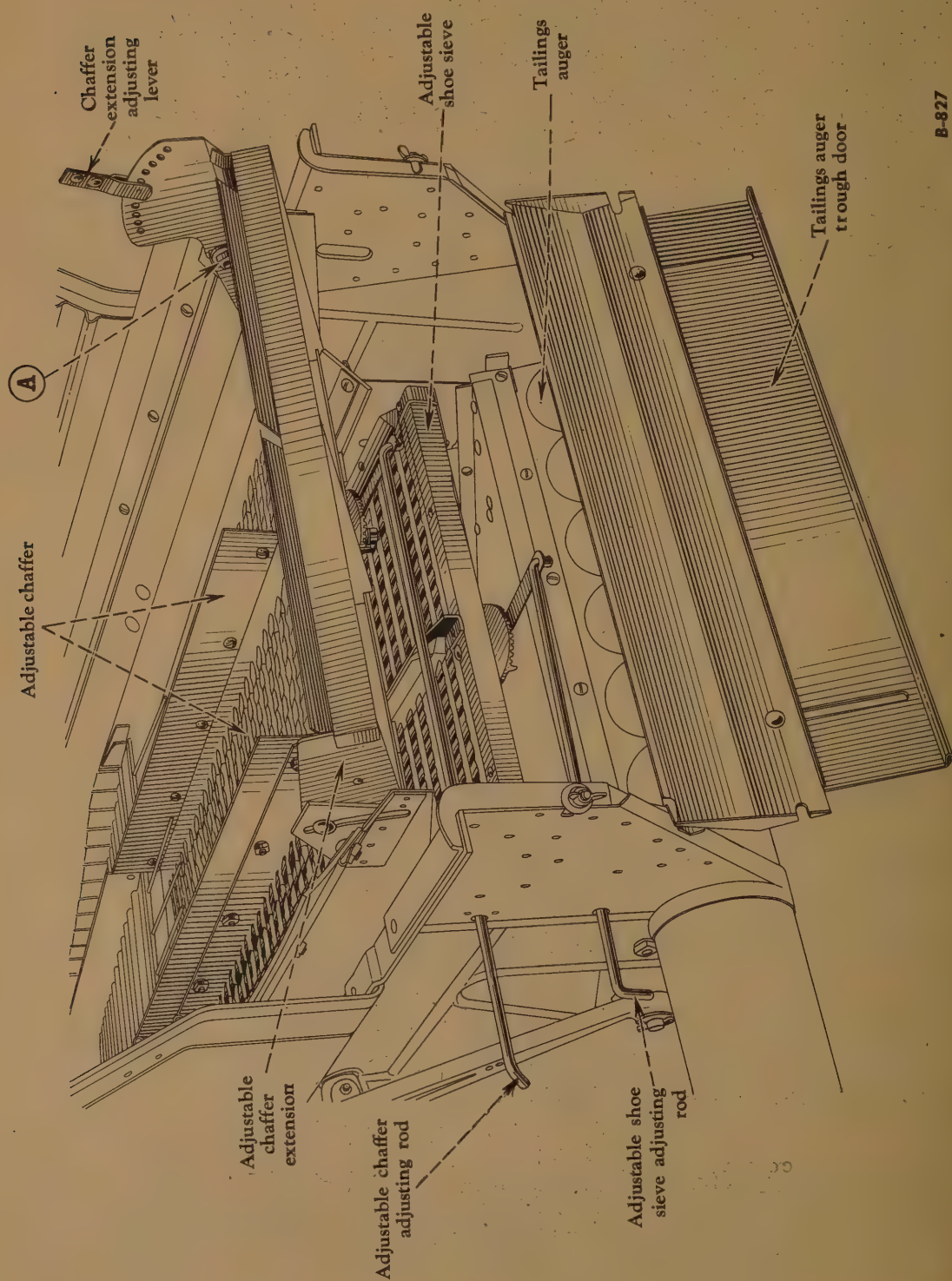


*Illust. 48* - Fan wind regulator levers.



*Illust. 49* - Fan wind deflector.

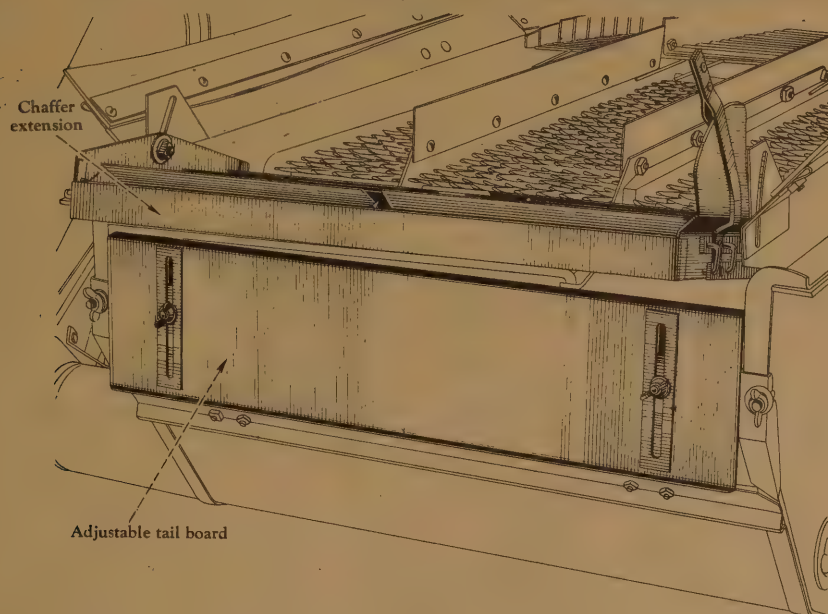
## FAN AND SHOE - Continued



B-827

Illustr. 50 - Tailings auger trough door, chaffer shoe sieve and adjusting rods.

## GRAIN PAN, CHAFFER, AND CHAFFER EXTENSION



A-3354

Illust. 51 - Tailings conveyor trough tail board.

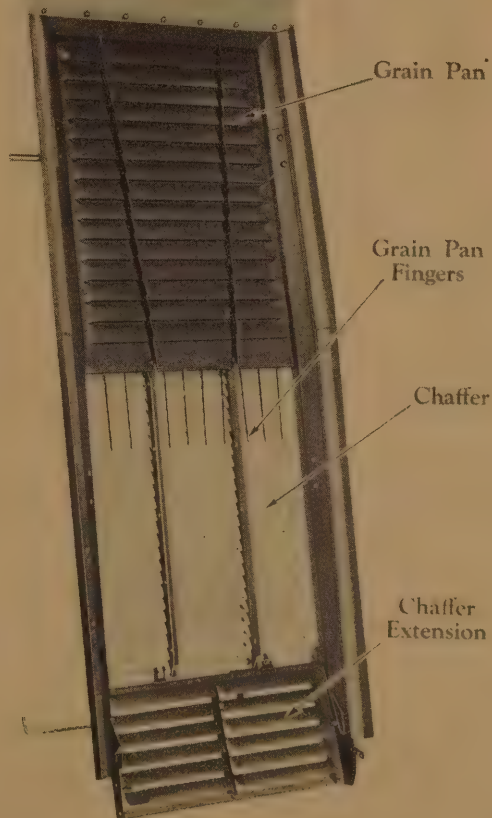
### CHAFFER AND SHOE SIEVE ADJUSTMENT

The chaffer should be open enough to allow loose grain to fall through and at the same time float weeds and chaff over onto the chaffer extension.

The openings in the adjustable chaffer extension should be wide enough to allow any unthreshed heads to fall through in the tailings trough and at the same time carry over weed stems, straw joints and other coarse material. The adjusting lever is located at the rear right hand corner of the extension. See Illust. 50.

The chaffer extension side brackets are slotted so that the extension can be raised or lowered independently of the chaffer.

The adjustable shoe sieve should be set close enough to allow threshed grain only to pass through to the grain auger. White caps, straw joints and pieces of unthreshed heads should be floated over into the tailings trough. It should be remembered, however, that the finer the sieves in the shoe, the greater will be the amount of tailings which is apt to cause excessive cracking of the grain.



Illust. 52 - Grain pan, chaffer, and chaffer extension.



## GRAIN PAN, CHAFFER, AND CHAFFER EXTENSION - Continued

### CHAFFER AND SHOE SIEVE ADJUSTMENT - Continued

The chaffer and shoe sieve adjusting rods are conveniently located on the rear left side. See *Illust. 50*.

In dry, weedy conditions when heavy stalks have a tendency to fall through the adjustable chaffer, the adjustable shoe sieve can be moved up to the chaffer position and a special round hole sieve is then used in the adjustable shoe sieve position. The adjustable chaffer extension should then be removed from the chaffer and assembled on the adjustable shoe sieve.

Four holes are provided in the front and rear ends of the shoe sides for each of the bolts that hold the shoe sieve in place. See "A", *Illust. 47*. The shoe sieve can be raised or lowered at both ends as conditions may require.

Lowering the shoe sieve too much at the rear end may result in too many tailings, thereby causing excessive cracking. The volume of tailings usually indicates what is happening in the machine. Be sure to check the amount of tailings being returned as well as the contents after making sieve and wind adjustments. A hand hole is provided in the tailings elevator downspout for that purpose. See "C", *Illust. 10*.

If desired, an additional sieve may also be used under the adjustable shoe sieve. Many operators use this arrangement for harvesting clovers and similar small seed crops. While a cleaner sample can sometimes be obtained, there is usually more seed lost over the chaffer extension and a heavier tailings will be carried because the wind blast will not be as effective on three sieves as it would be on only two. The wind blast being the medium of separation, the sieves serving only to support the mass of chaff and seed, it is very important to have sufficient wind blast to agitate the chaff and release the threshed seed. When a sieve is used in the shoe below the adjustable sieve and the crop being threshed breaks up, causing a heavy mass of chaff on the chaffer and shoe sieve, there may not be sufficient room between the sieves for thorough agitation of the chaff.

This is naturally more true of a heavy crop than a light one so the crop being harvested and the condition of the crop will be the determining factor rather than attempting to classify crops as those that can be best harvested using two sieves in the shoe and those that cannot.

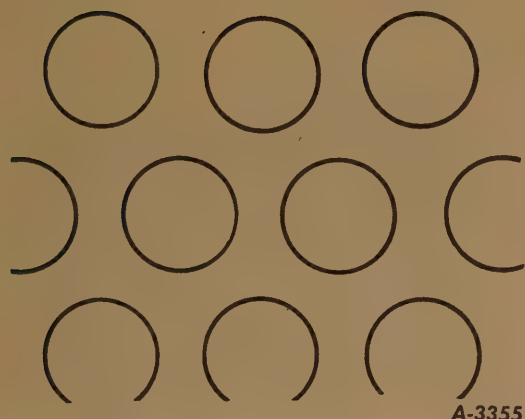
The hinged door (see *Illust. 50*) at rear of tailings conveyor trough is provided for easy access to the sieves for adjustment or replacement of sieves.

To remove the shoe sieve, remove the nuts and lock washers from the four bolts holding the sieve to the shoe sides. See "A", *Illust. 47*. Open the hand hole covers in the shoe sides see "B", *Illust. 47* and remove the bolts by reaching through the hand hole; then remove the sieve.

To remove the chaffer, raise the chaffer extension by loosening the nuts on the bolts in the slotted brackets. See "A", *Illust. 50*. Remove the rear bolts in the chaffer sieve (one on each side) by reaching under it; Remove the nuts and lock washers from the lower bolts in the grain pan shaker arm pivot brackets (two bolts on each side). See "C", *Illust. 47*. The chaffer may now be removed through the rear end of the machine.

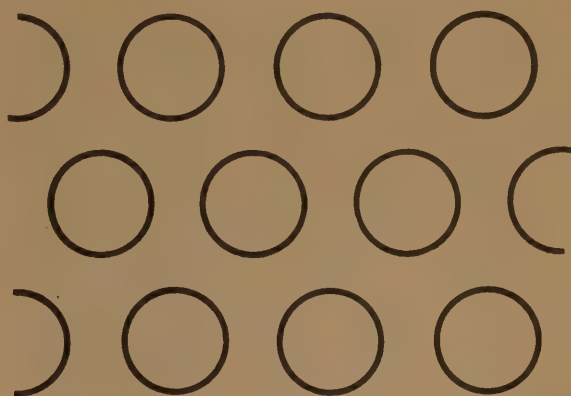
## SIEVES AND SHOE BOTTOM SCREENS

*Illustrations show actual size of holes.*



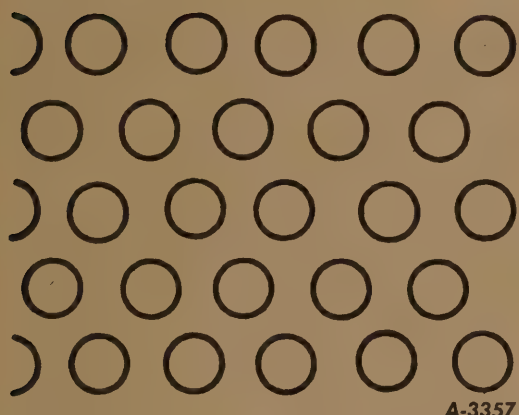
A-3355

Illustr. 53  
17785 KA Shoe sieve for peas  
(7/16" round holes).



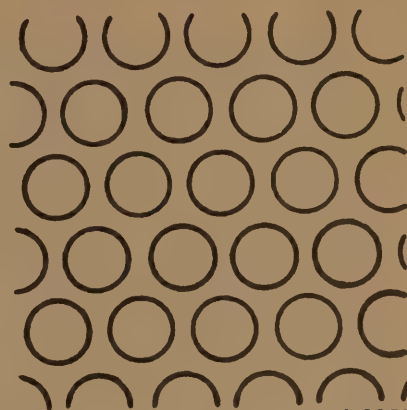
A-3356

Illustr. 54  
17783 KA Shoe sieve for vetch,  
crotolaria, okra and soy beans  
(3/8" round holes).



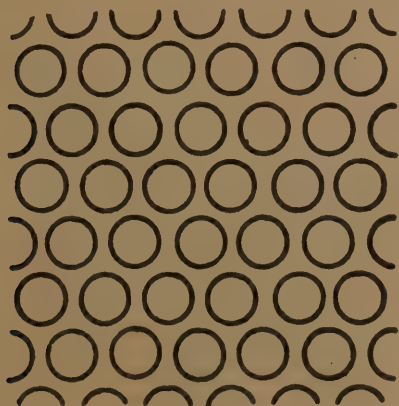
A-3357

Illustr. 55  
19116 KA Shoe sieve for  
kaffir and grain sorghums  
(7/32" round hole) (special).



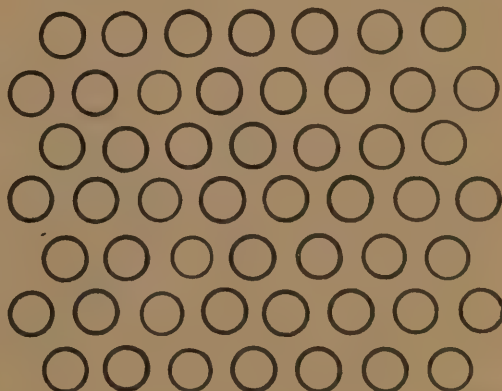
A-3358

Illustr. 56  
17781 KA Shoe sieve for wheat  
garden beets and sugar beets  
(15/64" round holes) (special).



A-3359

Illustr. 57  
17779 KA Shoe sieve for flax  
(3/16" round holes).

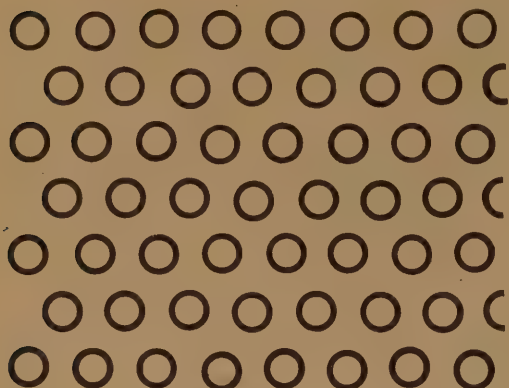


A-3360

Illustr. 58  
18516 KA Shoe sieve for lespedeza  
(5/32" round holes).

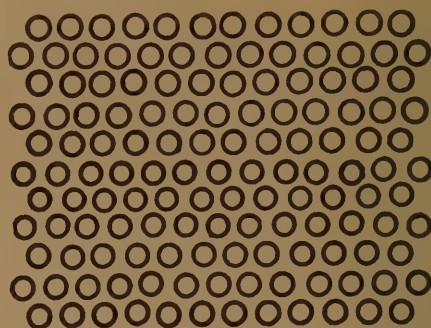
## SIEVES AND SHOE BOTTOM SCREENS - Continued

*Illustrations show actual size of holes.*



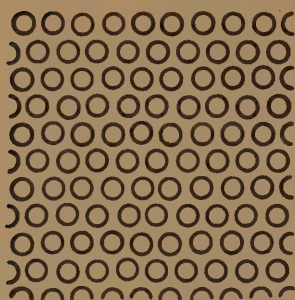
A-3361

Illust. 59  
18518 KA Shoe sieve for  
millet and spinach  
(9/64" round holes).



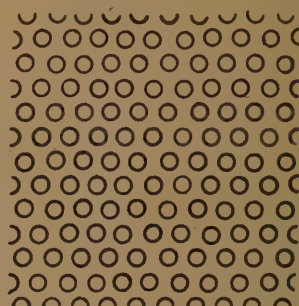
A-3362

Illust. 60  
17777 KA Shoe sieve for  
crimson clover.  
(7/64" round holes) (special).



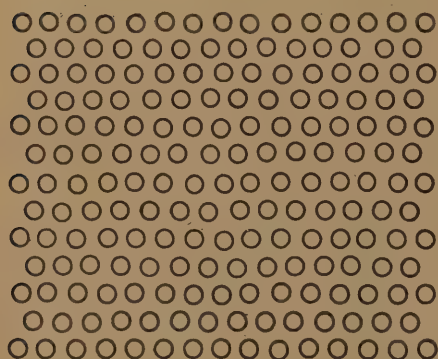
A-3363

Illust. 61  
17773 KA Shoe sieve for Alfalfa  
20389 K Shoe bottom sieve  
(1/10" round holes).



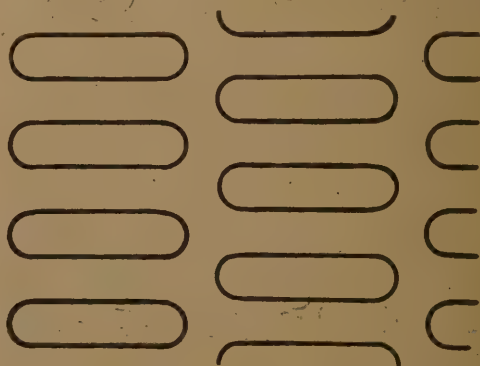
A-3364

Illust. 62  
17775 KA Shoe sieve for alsike, mammoth,  
sweet and red clovers, lettuce, timothy,  
and mustard (1/12" round holes).



A-3365

Illust. 63  
18690 KA Shoe sieve for  
bur, hop, ladino, lappaceum,  
and white clovers,  
(1/16" round holes).



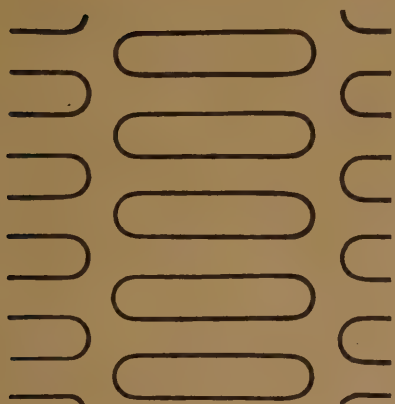
A-3366

Illust. 64  
17370 K Shoe bottom screen  
(3/16" x 3/4" slotted holes)  
(special).



## SIEVES AND SHOE BOTTOM SCREENS - Continued

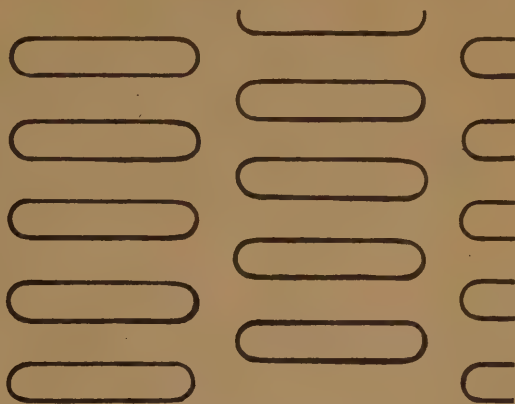
*Illustrations show actual size of holes.*



A-3367

Illustr. 65

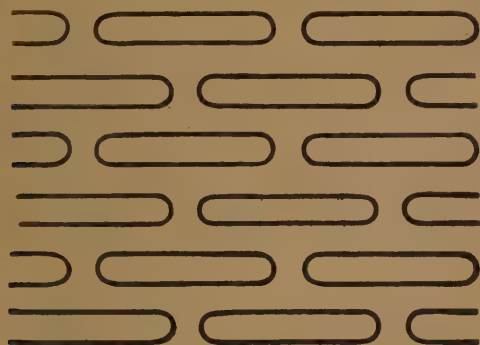
18512 KA Shoe sieve for removing white caps ( $5/32 \times 3/4$ " slotted holes) (special).



A-3368

Illustr. 66

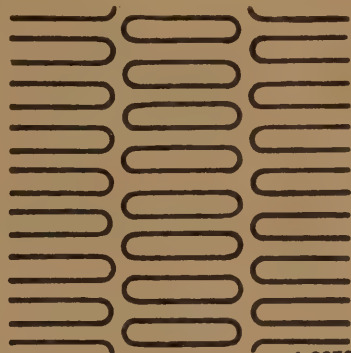
18534 K Shoe bottom screen for beans ( $9/64 \times 3/4$ " slotted holes).



A-3369

Illustr. 67

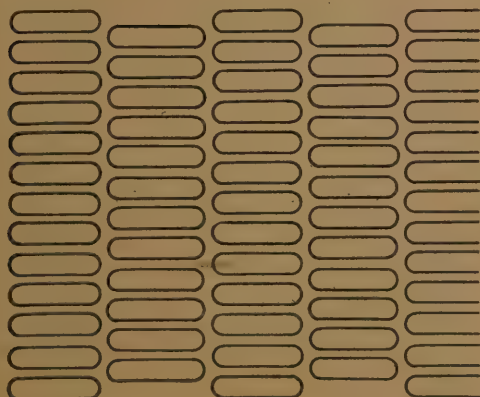
17369 K Shoe bottom screen ( $1/8 \times 3/4$ " slotted holes) (special).



A-3370

Illustr. 68

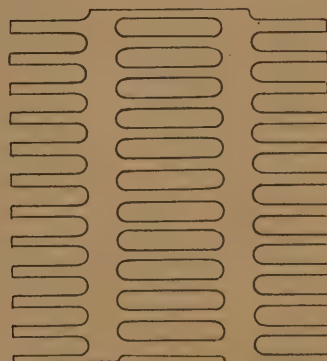
18514 KA Shoe sieve for Bermuda, blue and carpet grasses ( $3/32 \times 1/2$ " oblong holes).



A-3371

Illustr. 69

18510 KA Shoe sieve for canary grass ( $1/16 \times 3/8$ " slotted holes).



A-5025

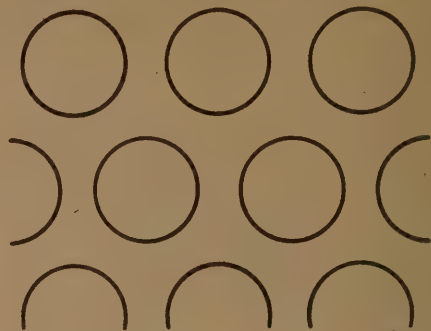
Illustr. 70

19301 K Shoe bottom screen ( $1/14 \times 1/2$ " slotted holes) (special).

## SIEVES AND SHOE BOTTOM SCREENS - Continued

*Illustration shows actual  
size of holes*

Illust. 71  
22010 KA Shoe sieve for beans  
(1/2" round holes) (special).



A-3372

## ELEVATORS AND CONVEYORS

After the grain falls through the chaffer and shoe sieve into the grain trough, it is conveyed to the grain elevator and delivered to the grain tank or bagger by means of the conveyor chain driven from the pulley on the grain elevator head shaft. The tailings, usually consisting of chaff and unthreshed heads floated over from the chaffer and shoe sieve, are carried to the tailings elevator by means of the conveyor worm. The elevator conveyor chain returns the tailings to the cylinder for re-threshing.

## GRAIN TANK UNLOADER

(For machines equipped with Grain Tank Attachment)

*See Illusts. 72, 73, and 74.*

The grain tank capacity is approximately 18 bushels. Unloading is done by means of the auger in the unloader pipe which is driven from the pulley "A" on the transmission gear case by means of the V-belt "B". The unloader drive is operated by clutch lever "C" and shifter rod "D", which extends from the clutch lever to within easy reach of the operator. This clutch disconnects the power transmitted to the machine while the unloader is in operation. CAUTION! Don't shift clutch when propeller shaft is running.

## TO UNLOAD THE GRAIN TANK

1. Stop the tractor power take-off by depressing the tractor clutch pedal. Hold it depressed. Turn the clutch shifter rod "D" enough to release it from the notch in the lock. Pull the rod forward to disconnect the power from the machine. The tractor clutch pedal may now be released to start the unloader drive in operation.
2. Loosen the suspension pipe lock "D". Swing out the unloader elevator to the unloading position. When the elevator is swung out, drive belt "B" is tightened, thereby starting the unloader elevator in operation. The set collar "F" on the suspension pipe should be set against lock "E" so the drive belt is just tight enough to drive the unloader when the elevator is in the unloading position.

3. After the grain tank has been unloaded, raise the unloader elevator to its upright position and lock it in place. *See Illust. 73.*

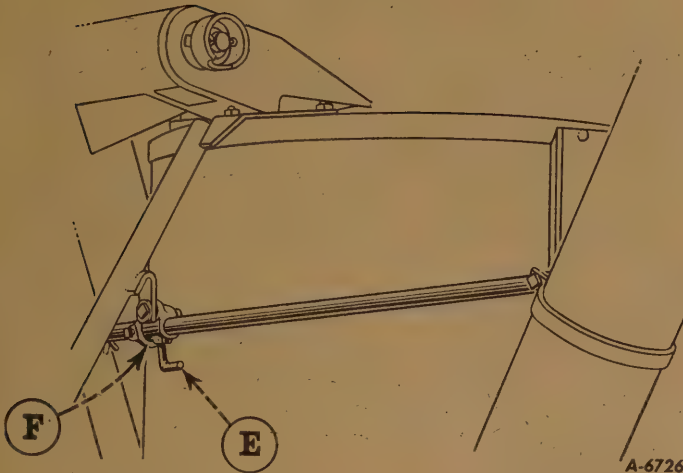
## TO START THE MACHINE IN OPERATION AFTER THE GRAIN TANK HAS BEEN UNLOADED

Depress the tractor clutch pedal to stop the power take-off (hold it depressed), push the clutch shifter rod "D" rearward into the notch in lock plate; shift gears on tractor for proper forward speed, then release the tractor clutch pedal slowly to start the machine in operation.

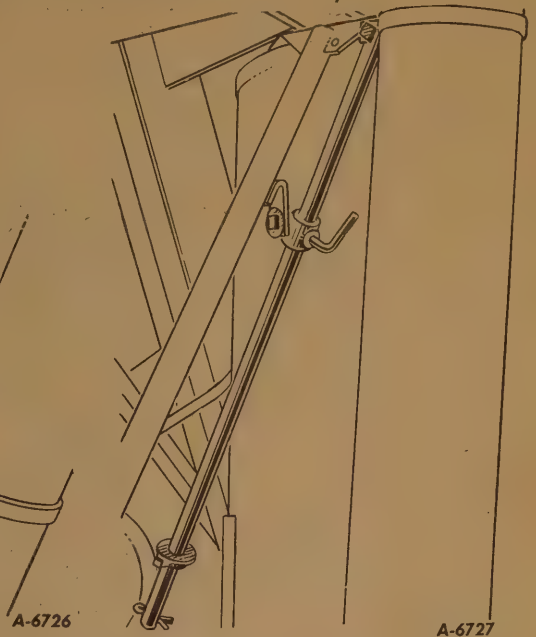
## TO CLEAN OUT THE GRAIN TANK UNLOADER ELEVATOR

After the field has been harvested and it is desired to thresh another crop, the grain tank unloader elevator may be cleaned out by removing the cover over the clean-out hole. *See "G", Illust. 74.*

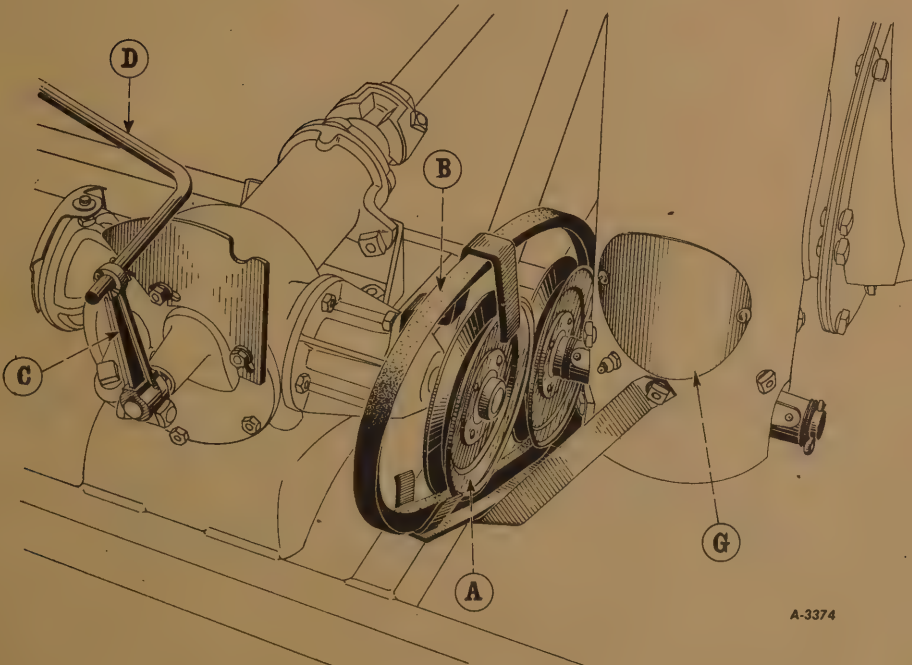
**GRAIN TANK UNLOADER - Continued**  
 (For Machines equipped with Grain Tank Attachment)



Illustr. 72 - Grain tank unloader elevator suspension pipe. (Unloader elevator in unloading position.)



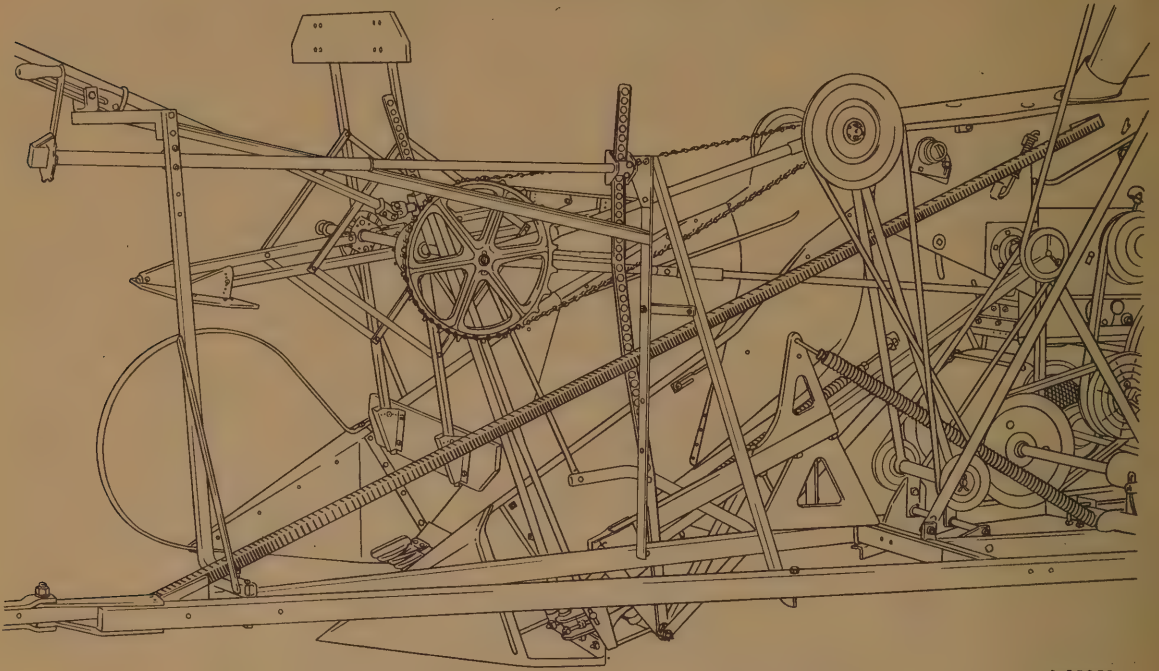
Illustr. 73 - Grain tank unloader elevator suspension pipe. (Unloader elevator in upright position.)



Illustr. 74  
 Grain tank unloader drive with clutch shifter rod "D" in position for unloading grain tank.



## SPECIAL EQUIPMENT



A-18051

Illust. 75  
Heavy A-frame angle (special)  
(for extremely rough, hilly, or terraced lands).

Ordering No. 22544 K

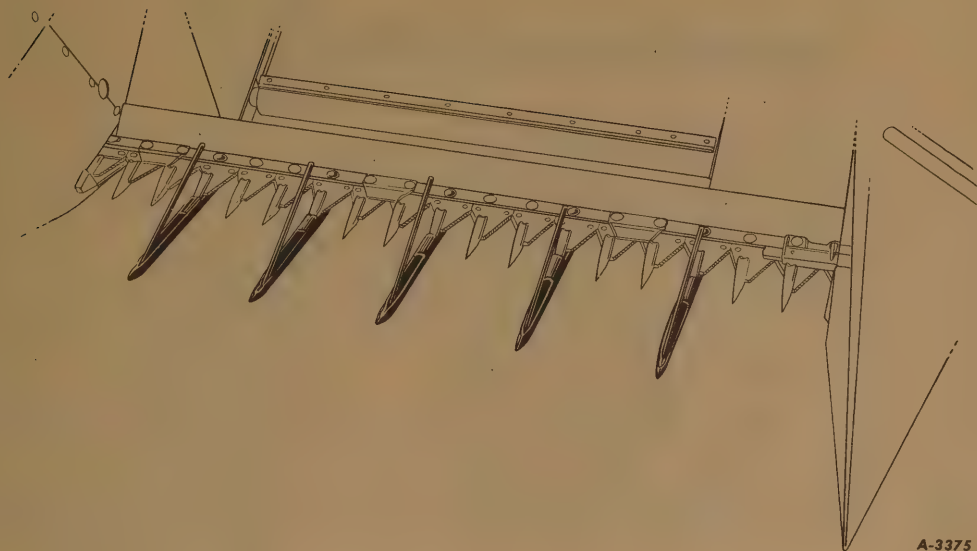


A-18052

Illust. 76  
Knife with under serrated sections (for use when clogging  
and gumming of knife is encountered when cutting flax, etc.).

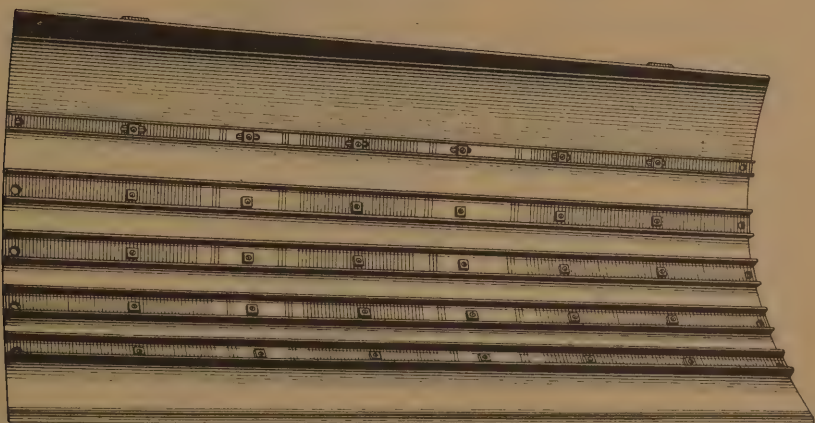
Ordering No. 49540 K

## SPECIAL EQUIPMENT - Continued



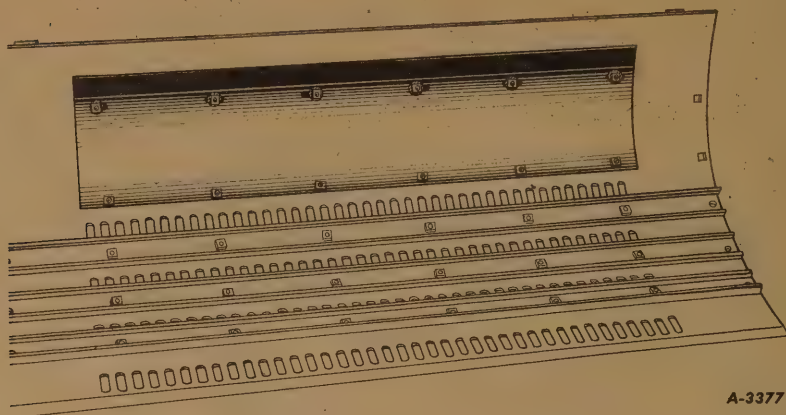
Illust. 77  
Grain Lifters (13680 KA) (special)  
(five required).

These Grain Lifters are for use in down and tangled grain; they may also be used for picking up windrowed clover if the machine is not equipped with a Windrow Pickup Attachment.



Illust. 78  
Concave grate (blank) (18427 K) (special)  
(for threshing beans, peas, vetch, crotonaria, okra, etc.).

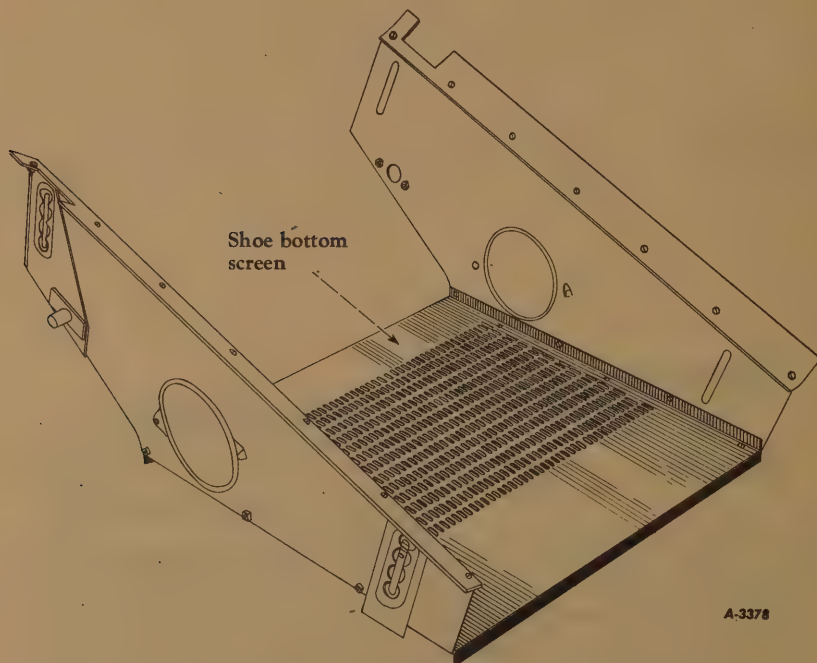
## SPECIAL EQUIPMENT - Continued



A-3377

Illustr. 79 - Concave grate cover (21703 K) (special).

The concave grate cover (see Illustr. 79), may be required to prevent stalks from sticking and hanging in the grate holes when harvesting Edible Beans or Soy Beans.



A-3378

Illustr. 80 - Special shoe bottom screens (as ordered).

17369 K (1/8 x 3/4" slotted holes)  
 17370 K (3/16 x 3/4" slotted holes)  
 18534 K (9/64 x 3/4" slotted holes)

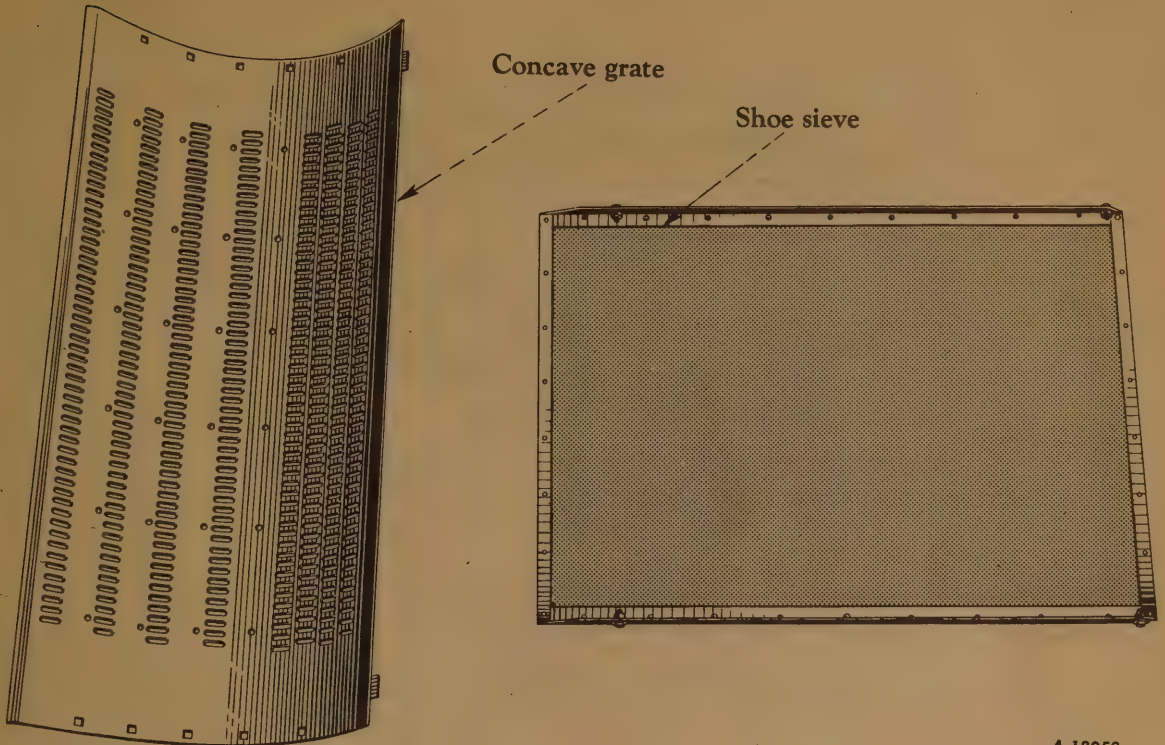
(for sifting dirt out of  
 threshed beans).

19301 K (1/14x1/2" slotted holes)  
 (for removing sweet clover  
 from grain).

20389 K (1/10" round holes) (for  
 removing weed seed).



## SPECIAL EQUIPMENT - Continued

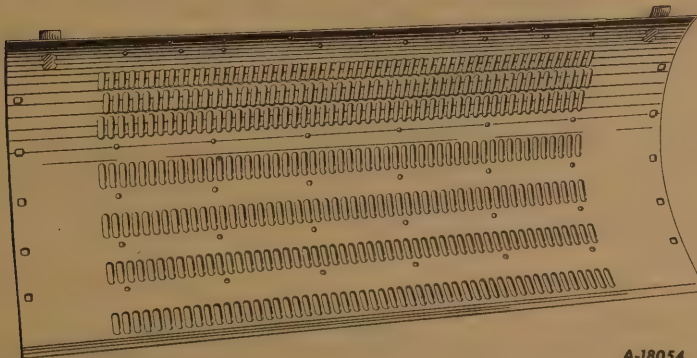


A-18053

Illustr. 81 - Alfalfa, clover, grass, and timothy attachments.

Ordering Nos.

- ZDA-1161 Alfalfa attachment (17773 KA shoe sieve, 1/10" round holes).
- ZDA-1162 Clover and timothy attachment (17775 KA shoe sieve, 1/12" round holes) for alsike, mammoth, red, and sweet clovers.
- ZDA-1163 Grass attachment (18514 KA shoe sieve, 3/32 x 1/2" slotted holes) for bermuda, blue, and carpet grass.
- ZDA-1164 Clover attachment (18690 KA shoe sieve, 1/16" round holes) for hop, ladino, lappaceum, bur, and white clovers.



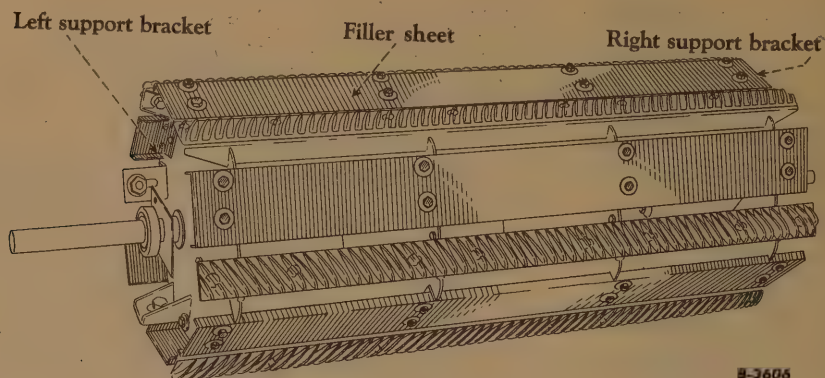
A-18054

Illustr. 82 - Concave grates (special).

Ordering Nos.

- 17141 K (5/16 x 1-1/4" slotted holes) for large soy beans.
- 17142 K (3/8 x 1-1/4" slotted holes) for peas, vetch, crotonaria, okra, soy beans, etc.
- 21188 K (5/8 x 1-1/4" slotted holes) for edible beans.

## SPECIAL EQUIPMENT - Continued

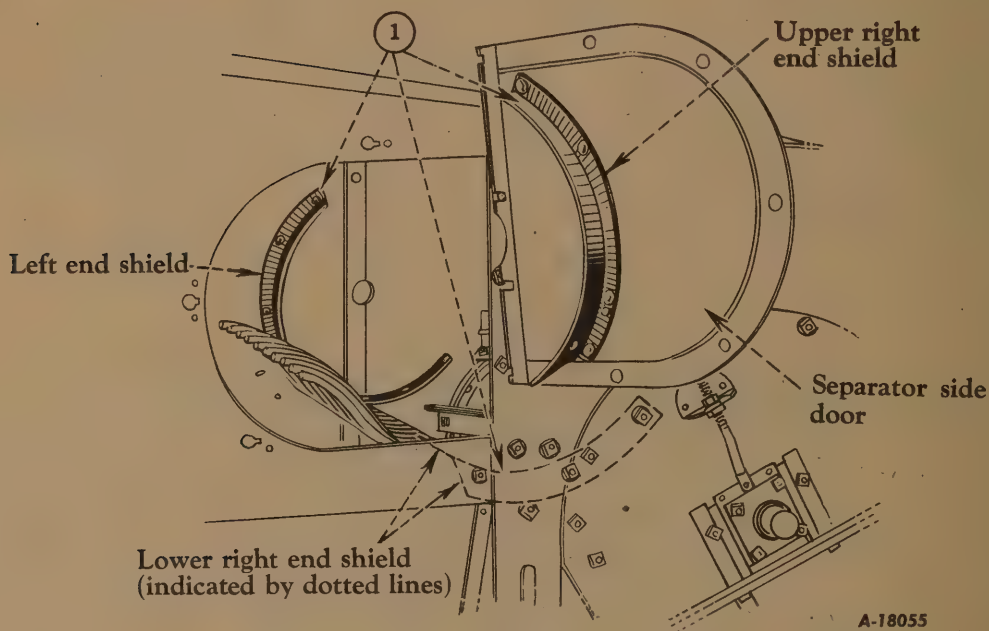


B-3606

Illust. 83 - Cylinder bar filler sheets attachment.  
(For threshing flax, crimson clover, etc.) (Regularly furnished  
with flax attachment ZDA-1151)

Ordering No. 20437 K consists of:

- 12 left support bracket (19254 K)
- 6 filler sheets (19257 K)
- 12 right support brackets (19253 K)

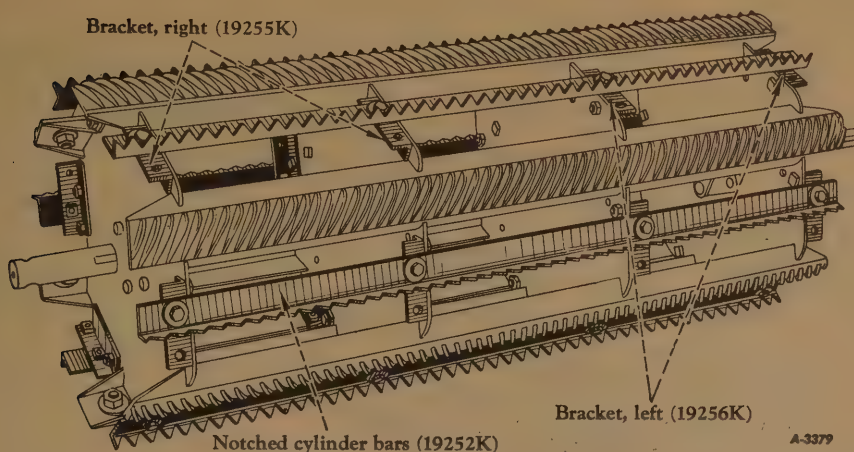


A-18055

Illust. 84 - Cylinder beater end shields.  
(Separator side door removed to show location of end shields) Templates  
are furnished for adding the required holes in the cylinder and separator  
side sheets. (For tangled and viny crops) (Regularly furnished with Pea  
and Vetch Attachment ZDA-1188).

Ordering No. 19342 K

## SPECIAL EQUIPMENT - Continued



Illustr. 85 - Supplemental notched cylinder bars (special).

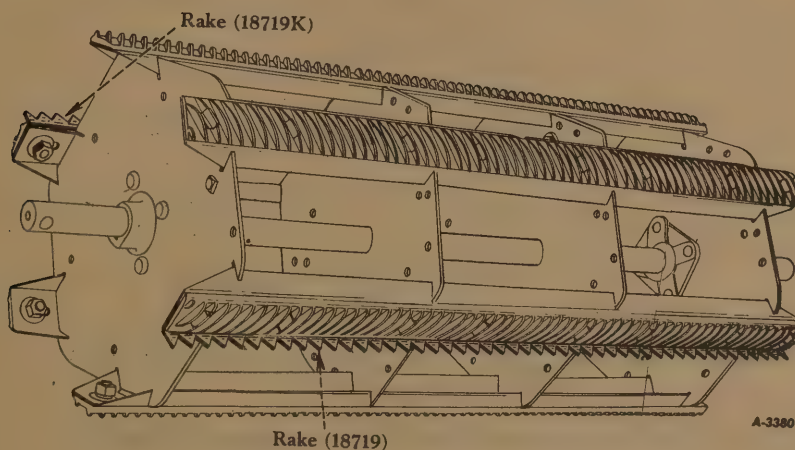
Ordering Number 19275 K.

Notched cylinder bars may be required when more aggressive feeding is desired, particularly in very heavy, weedy, tangled, fluffy and viny crops, to prevent winding or bunching in front of cylinder. See Illustr. 85.

19275 K package of notched bars consists of six notched angle bars and the necessary parts for attaching.

These may be used in sets of three or six, as may be required to overcome winding and bunching in front of the cylinder.

When three notched bars are used they should be equally spaced on the cylinder; this is important, in order to maintain proper cylinder balance.



Illustr. 86 - Cylinder bar rake.

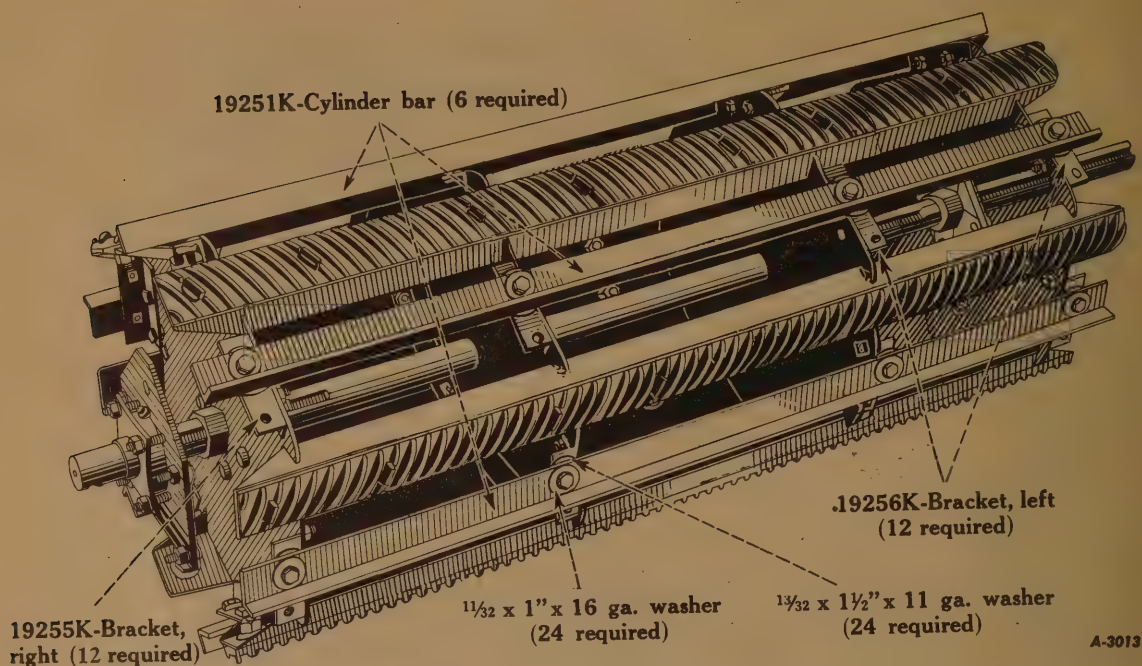
Ordering Number 19340 K.

Two cylinder bar rakes (18719 K) may be obtained when more aggressive feeding is desired. These bars are used to prevent bunching in front of cylinder or slugging of cylinder, particularly in very heavy, weedy or viny crops. These are placed between the regular rasp bar and support.

When these rakes are used, they should be equally spaced on the cylinder; this is important, in order to maintain proper cylinder balance.



## SPECIAL EQUIPMENT - Continued

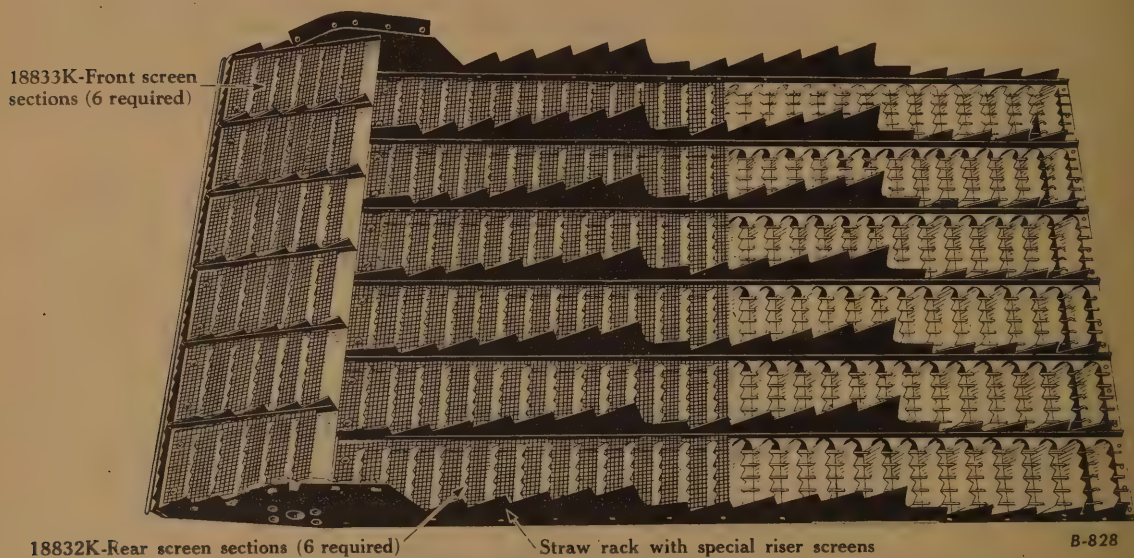


A-3013

Illustr. 87

Supplemental angle cylinder bars (Smooth bars - As Ordered)

Ordering Number 19274 K.



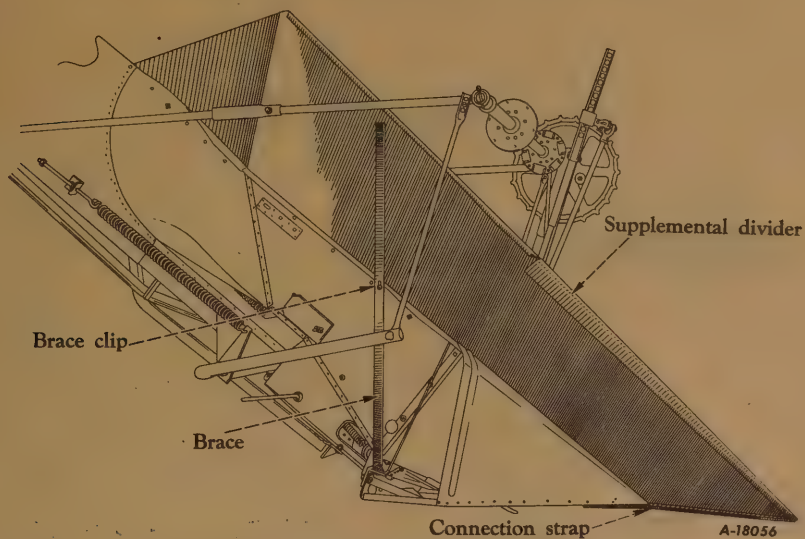
B-828

Illustr. 88

Mesh wire screen covers for straw rack (as ordered)  
 (for threshing clovers, garden beets, carrots,  
 lettuce, grass crops, grain sorghums, etc.).

When threshing some varieties of clovers and grass crops, where the hay breaks up badly, overloading the sieves; this difficulty may be overcome by using the special mesh wire screens to cover some of the straw rack riser sections as shown in Illustr. 88.

## SPECIAL EQUIPMENT - Continued



Illust. 89 - Supplemental outside divider (special) (for standing tall grain with drooping heads that must be cut low or when standing grain is cut low in order to save straw).

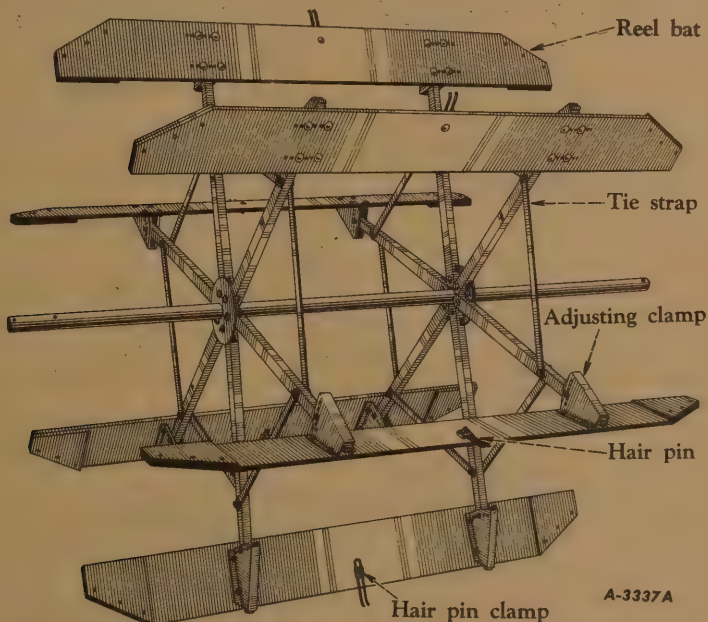
Ordering No. ZDA-1656

18299 K Brace clip

18301 K Connection strap

18300 K Brace

28774 K Supplemental divider



Illust. 90 - Reel converted from four to six bats.

The reel may be converted from four to six bats by adding two complete bats and bolting the arms, tie straps, and bats as shown in Illust. 90.

Ordering No. 38778 K

38645 K Reel bat, cp. (2 req'd)

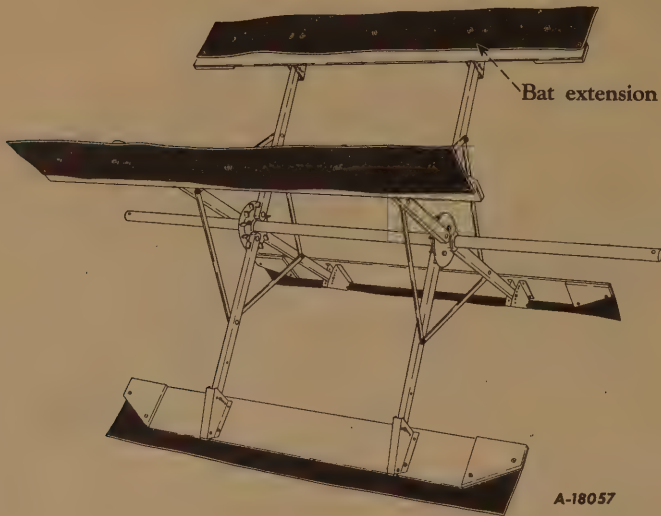
38523 K Hair pin (2 req'd)

M 34751 Tie strap (4 req'd)

38524 K Hair pin clamp (2 req'd)

38538 K Adjusting clamp (4 req'd)

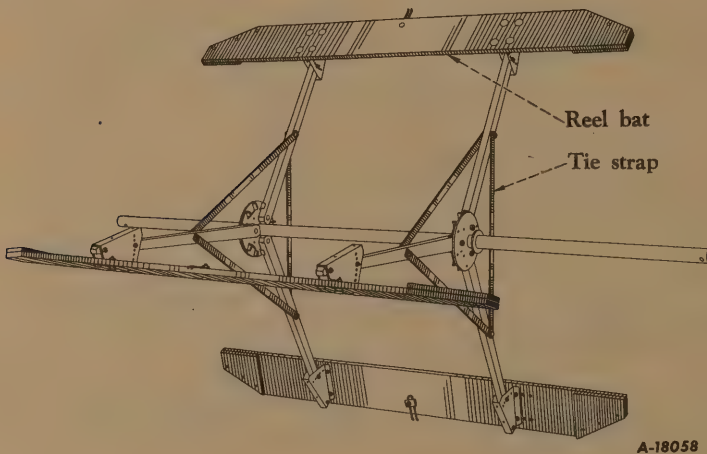
## SPECIAL EQUIPMENT - Continued



Illust. 91 - Rubber reel bat extensions.

Ordering Nos.

48277 K for four bat reel (consisting of 4 bat extensions, 48282 K).  
 48278 K for six bat reel (consisting of 6 bat extensions, 48482 K).



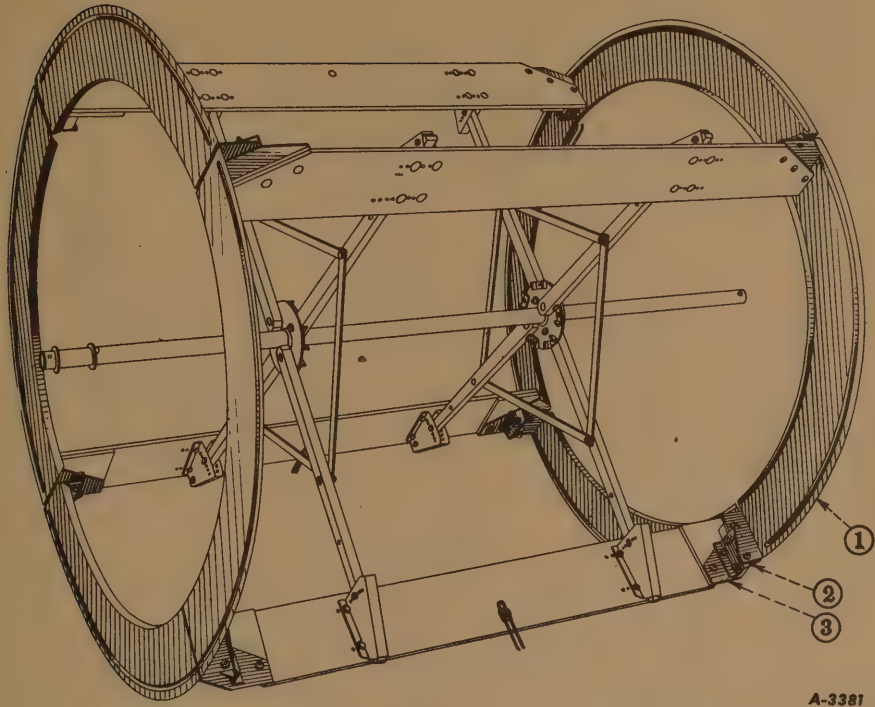
Illust. 92 - Heavy reel bats (for three bat reel).  
 (These bats are regularly furnished with the special parts for  
 threshing soy beans when grown with corn attachment.)

Ordering No. 48283 K

38938 K Reel bat (3 req'd).      21416 K Tie strap (6 req'd).



SPECIAL EQUIPMENT - Continued



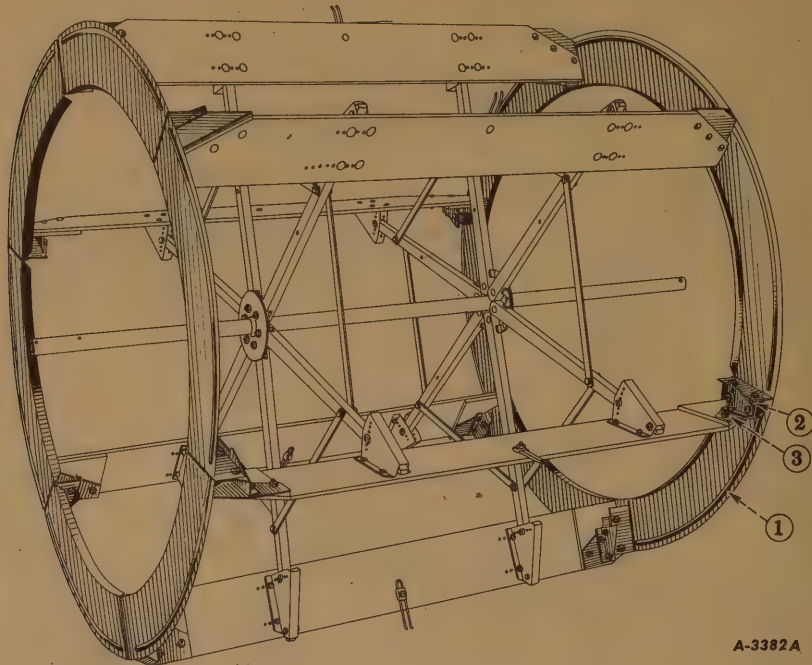
Illust. 93 - Reel end guards for four-bat reel (special).  
(for threshing soy beans and other viny crops).

Ordering Number 48281 K.

| Ref. No. | I H C Part No. | Description                         |
|----------|----------------|-------------------------------------|
| 1        | 15629 K        | Reel end guard.                     |
| 2        | { 48285 K      | Attaching plate, right.             |
|          | { 48286 K      | Attaching plate, left.              |
| 3        | { 48296 K      | Adjusting bracket, right, complete. |
|          | { 48297 K      | Adjusting bracket, left, complete.  |

The reel end guards can be used to prevent grain and vines from winding on the reel.

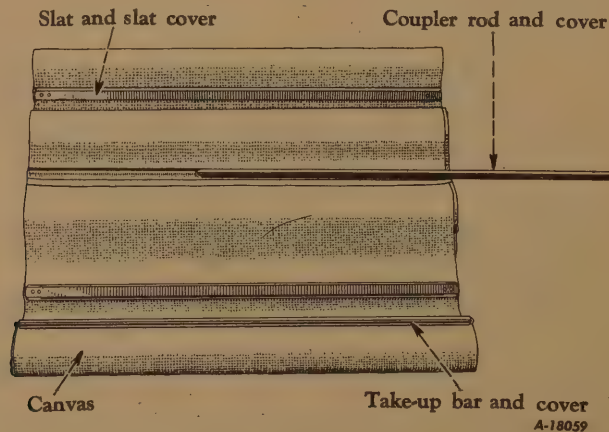
SPECIAL EQUIPMENT - Continued



Illustr. 94 - Reel end guards for six-bat reel (special) (for threshing soy beans and other viny crops). The reel end guards can be used to prevent grain and vines from winding on the reel.

Ordering No. 48280 K

| Ref. No. | Part Number | Description             | Ref. No. | Part Number | Description                         |
|----------|-------------|-------------------------|----------|-------------|-------------------------------------|
| 1        | M 87084     | Reel end guard.         | 3        | {48296 K    | Adjusting bracket, right, complete. |
| 2        | {48285 K    | Attaching plate, right. |          | {48297 K    | Adjusting bracket, left, complete.  |
|          | {48286 K    | Attaching plate, left.  |          |             |                                     |



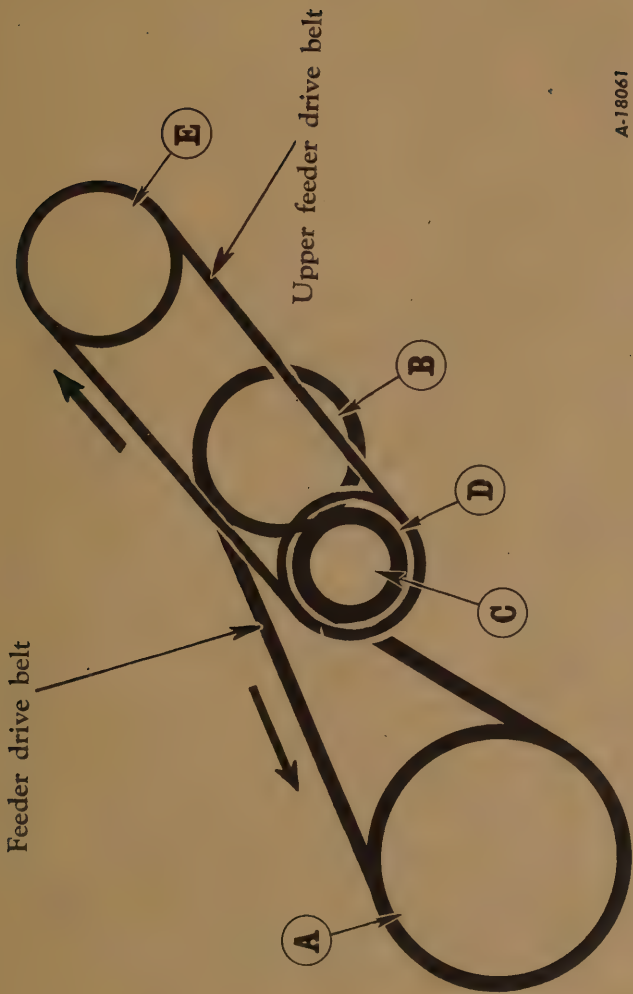
Illustr. 95 - Feed conveyor canvas for grain sorghums.

Ordering No. 28803 K

|          |                              |          |                              |
|----------|------------------------------|----------|------------------------------|
| 28586 K  | Slat (9 req'd).              | 17970 KA | Take-up bar (1 req'd).       |
| 22592 K  | Slat (9 req'd).              | 18065 KA | Take-up bar cover (1 req'd). |
| 18065 KA | Coupler rod cover (1 req'd). | 28802 K  | Canvas (1 req'd).            |
| 17969 K  | Coupler rod (2 req'd).       |          |                              |

BELT AND CHAIN DRIVES

BELT AND CHAIN DRIVES - RIGHT SIDE OF MACHINE



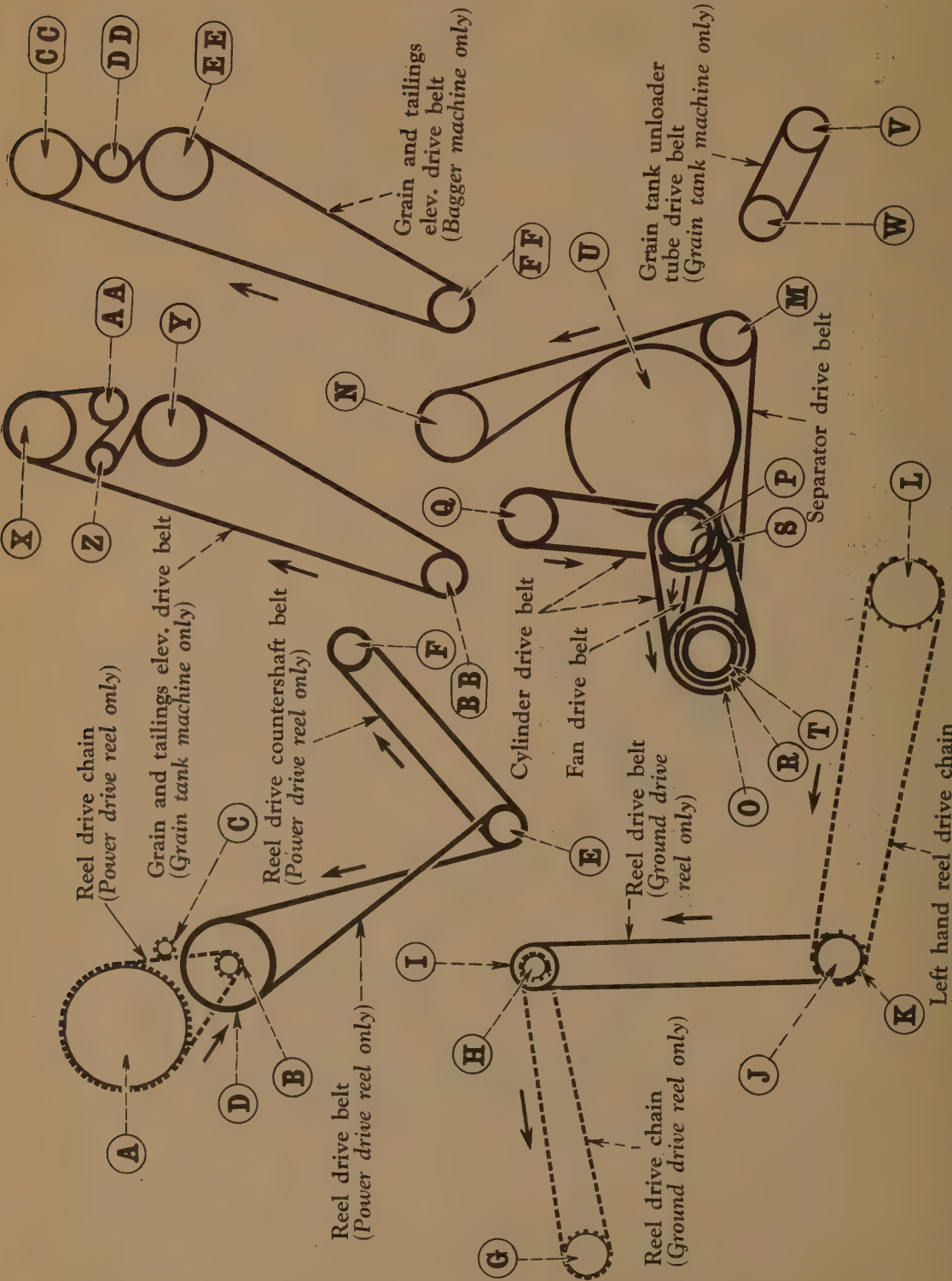
A-18061

Illust. 96 - Belt and chain drive for right side of machine.

| LETTER | PART NUMBER | NAME                                        | SIZE    | EQUIPMENT |
|--------|-------------|---------------------------------------------|---------|-----------|
| A      | 18115 K     | Shaker shaft pulley for feed conveyor drive | 15-7/8" | Regular   |
| B      | 18113 K     | Feed conveyor shaft pulley.....             | 10"     | Regular   |
| C      | 18112 K     | Feed conveyor drive belt tightener.....     | 6-5/16" | Regular   |
| D      | 38750 K     | Upper feed drive pulley.....                | 8-1/8"  | Regular   |
| E      | 38782 K     | Upper feeder shaft pulley.....              | 10-3/8" | Regular   |



BELT AND CHAIN DRIVES - Continued



A-18060

Illust. 97 - Belt and chain drives for left side of machine.

## BELT AND CHAIN DRIVES - Continued

## BELT AND CHAIN DRIVES - LEFT SIDE OF MACHINE

| LETTER                                                                   | PART<br>NUMBER | NAME                                                            | SIZE            | EQUIPMENT |
|--------------------------------------------------------------------------|----------------|-----------------------------------------------------------------|-----------------|-----------|
| <b>POWER DRIVE REEL - REGULAR UNLESS OTHERWISE SPECIFIED</b>             |                |                                                                 |                 |           |
| A                                                                        | 2021 K         | Reel Shaft Sprocket . . . . .                                   | 44-Teeth        | Regular   |
| B                                                                        | 1934 K         | Reel Jackshaft Sprocket . . . . .                               | 6-Teeth         | Regular   |
|                                                                          | 1935 K         | Reel Jackshaft Sprocket . . . . .                               | 8-Teeth         | Regular   |
|                                                                          | 1937 K         | Reel Jackshaft Sprocket . . . . .                               | 9-Teeth         | Regular   |
| C                                                                        | 1482 K         | Reel Drive Chain Tightener. . . . .                             | 6-Teeth         | Regular   |
| D                                                                        | 38330 K        | Reel Drive Jackshaft Pulley . . . . .                           | 11.656"P.D.     | Regular   |
| E                                                                        | 18635 K        | Reel Drive Countershaft Pulley. . . . .                         | 5.656"P.D.      | Regular   |
| F                                                                        | 1939 K         | Reel Drive Pulley . . . . .                                     | 4.656"P.D.      | Regular   |
| <b>GROUND DRIVE REEL - SPECIAL WHEN ORDERED</b>                          |                |                                                                 |                 |           |
| G                                                                        | 2519 K         | Reel Shaft Sprocket . . . . .                                   | 16-Teeth        | Regular   |
| H                                                                        | 1937 K         | Reel Drive Jackshaft Sprocket . . . . .                         | 9-Teeth         | Regular   |
| I                                                                        | 18635 K        | Reel Drive Jackshaft Pulley . . . . .                           | 6"              | Regular   |
| J                                                                        | 18635 K        | Reel Drive Countershaft Pulley. . . . .                         | 6"              | Regular   |
| K                                                                        | 1786 K         | Reel Drive Countershaft Sprocket. . . . .                       | 8-Teeth         | Special   |
|                                                                          | 1789 K         | Reel Drive Countershaft Sprocket. . . . .                       | 12-Teeth        | Regular   |
|                                                                          | 1790 K         | Reel Drive Countershaft Sprocket. . . . .                       | 15-Teeth        | Regular   |
| L                                                                        | 1796 K         | Reel Drive Axle Sprocket. . . . .                               | 15-Teeth        | Regular   |
|                                                                          | 1795 K         | Reel Drive Axle Sprocket. . . . .                               | 17-Teeth        | Special   |
| <b>CYLINDER AND SEPARATOR DRIVE - REGULAR UNLESS OTHERWISE SPECIFIED</b> |                |                                                                 |                 |           |
| M                                                                        | 18067 K        | Shaker Shaft & Cylinder Beater<br>Drive Belt Tightener. . . . . | 6-5/8"<br>9.11" | Regular   |
| N                                                                        | 16391 K        | Cylinder Beater Shaft Pulley. . . . .                           | 8-3/4"          | Regular   |
| O                                                                        | 16989 K        | Countershaft Cylinder Drive                                     | 12-1/2"         | Regular   |
|                                                                          | 16990 K        | Pulley (See Pages 29 to 33) . . . . .                           | 10-7/8"         | Special   |
|                                                                          | 18329 K        |                                                                 | 15-1/8"         | Special   |
| P                                                                        | 21056 K        | Variable Speed Pulley . . . . .                                 | 6.6"-8.9"       | Regular   |
|                                                                          | 2106 K         |                                                                 | 12-1/2"         | Regular   |
|                                                                          | 2107 K         |                                                                 | 8-3/4"          | Regular   |
| Q                                                                        | 16990 K        | Cylinder Shaft Pulley                                           | 10-7/8"         | Special   |
|                                                                          | 16989 K        | (See Pages 29 to 33). . . . .                                   | 7-1/8"          | Special   |
|                                                                          | 18329 K        |                                                                 | 6.171"          | Regular   |
| R                                                                        | 21058 K        | Countershaft Fan Drive Pulley . . . . .                         | 7.396"          | Regular   |
| S                                                                        | 20377 KA       |                                                                 | 5.075"          | Regular   |
|                                                                          |                |                                                                 | 6.197"          | Regular   |
| T                                                                        | 18005 KA       | Fan Shaft Pulley. . . . .                                       | 6-3/4"          | Regular   |
| U                                                                        | 20376 K        | Countershaft Cylinder Beater<br>Pulley . . . . .                | 21-1/2"         | Regular   |
| V                                                                        | 18114 K        | Shaker Shaft Pulley . . . . .                                   |                 | Regular   |
| <b>MACHINES EQUIPPED WITH GRAIN TANKS</b>                                |                |                                                                 |                 |           |
| V                                                                        | 18545 K        | Grain Tank Unloader Shaft Pulley. . . . .                       | 5-7/8"          | Regular   |
| W                                                                        | 18545 K        | Grain Tank Unloader Drive Pulley. . . . .                       | 5-7/8"          | Regular   |
| X                                                                        | 18546 K        | Grain Elevator Pulley . . . . .                                 | 8-7/16"         | Regular   |
| Y                                                                        | 16390 K        | Tailings Elevator Pulley. . . . .                               | 3-9/16"         | Regular   |
| Z                                                                        | 38595 K        | Grain Tank Delivery Auger Pulley. . . . .                       | 4-5/16"         | Regular   |
| AA                                                                       | 48252 K        | Elevator Drive Belt Pulley. . . . .                             | 5.23"           | Regular   |
| BB                                                                       | 1939 K         | Elevator Drive Pulley . . . . .                                 |                 | Regular   |
| <b>MACHINES EQUIPPED WITH BAGGERS</b>                                    |                |                                                                 |                 |           |
| CC                                                                       | 18546 K        | Grain Elevator Pulley . . . . .                                 | 8-7/16"         | Regular   |
| DD                                                                       | 17876 K        | Elevator Drive Belt Tightener . . . . .                         | 4-5/16"         | Regular   |
| EE                                                                       | 16390 K        | Tailings Elevator Pulley. . . . .                               | 8-7/16"         | Regular   |
| FF                                                                       | 1939 K         | Elevator Drive Pulley . . . . .                                 | 5.23"           | Regular   |

\* Alternate Teeth Omitted

## HARVESTER THRESHER TROUBLE SHOOTING

The following suggested remedies are to familiarize the operator with adjustments that may be made for the most common difficulties encountered in the field. The adjustments are dependent on the conditions of the field and as harvesting conditions are varied, a number of suggestions are shown with each difficulty. Often the trouble can be corrected by following only one of the suggestions. The operator should make a sincere effort to understand his machine and carefully observe the effect of all adjustments. If this is done, the operator will have little trouble in deciding when to adjust and also which adjustment will solve his problem.

The use of Special Parts mentioned herein will, under certain conditions, be helpful. When difficulty is encountered, the operator should first adjust the machine as advised rather than resort to the Special Parts. The Special Parts alone will not give good results if proper machine adjustment is not maintained.

| Trouble                                                                                           | Suggested Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Breakage of A-frame angle.                                                                        | 1. Use the special heavy A-frame angle (Ordering No. 22544 KA).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Outer ends of the reel wrapping with vines or tangled grain.                                      | 1. Reduce vertical pitch of the reel bats.<br>2. Use the special reel end guards to prevent grain and vines from wrapping on the reel. Reel end guards are supplied for the four-bat reel (Order No. 48281 K), <i>see Illust. 93</i> , and the six-bat reel (Order No. 48280 K), <i>see Illust. 94</i> .<br>3. If using special six-bat reel, reduce to four-bat reel.                                                                                                                                                                                                 |
| Grain shattering at the reel.                                                                     | 1. Reduce reel speed. <i>See page 19-21.</i><br>2. Use special rubber reel bat extensions. Extensions are supplied for the four-bat reel (Order No. 48277 K) and for the six-bat reel (Order No. 48278 K).                                                                                                                                                                                                                                                                                                                                                             |
| Breakage of reel bats in fields where extremely large and tough stalks and weeds are encountered. | 1. On machines with power drive reels, install the special reel drive slip clutch and special reel shaft (Order No. 38916 K).<br>2. Use the special heavy reel bats (Order No. 48283 K). These bats are regularly furnished with the special parts for harvesting soy beans when grown with corn attachment (ZDA-1468).                                                                                                                                                                                                                                                |
| Heavy cutter bar loss with Lespedeza.                                                             | 1. The special lespedeza attachment (Order No. ZDB-1486) is recommended.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Cut grain falling off of the cutter bar or choking of knife because of extremely short straw.     | 1. Move the reel close to the cutter bar and as far back as possible.<br>2. Bend up the guards where the knife section is over 1/64" away from the ledger plate. Replace all chipped and worn out knife sections and ledger plates.<br>3. Increase the ground travel speed.<br>4. Convert the four-bat reel to the special six-bat reel (Order No. 38778 K).<br>5. Use special rubber reel bat extensions to wipe guards. Extensions are supplied for the four-bat reel (Order No. 48277 K) and for the six-bat reel (Order No. 48278 K).<br>(Continued on next page.) |



## HARVESTER THRESHER TROUBLE SHOOTING - Continued

### Trouble

### Suggested Remedy

Cut grain falling off the cutter bar or choking the knife because of extremely short straw - (continued).

6. For the ground drive reel a special fast speed reel drive countershaft sprocket (8-T) (Order No. 1786 K) may be used. *See page 21.* If further speed is desired, a special reel drive sprocket (17-T) (Order No. 1795 K) can be used to replace the 15-T sprocket on the axle. *See page 21.*

7. Parts converting the ground drive reel to a power drive reel are available (Order No. 48497 K).

8. For the power drive reel, use the 9-T sprocket furnished with the machine to speed up the reel. *See page 19.*

9. Use the special lespedeza guards (Order five six-prong guards (1497 K), one four-prong guard (550 033 R11), and one three-prong guard (550 034 R11). These guards are regularly furnished with the lespedeza attachment (ZDB-1486).

Clogging and gumming of the knife occasionally encountered when cutting flax, etc.

1. Replace all chipped and worn out knife sections.

2. Wash down the knife occasionally with kerosene.

3. Use the special knife with under-serrated sections (Order No. 49540 K).

Down, tangled grain difficult to pick up, divide, or guide into the feeder.

1. Use the grain lifters. *See Illust. 77.*

2. Operate the reel as low and close to the cutter bar as possible.

3. Change from four-bat reel to special six-bat reel (Order No. 38778 K).

4. Use the special rubber reel bat extensions. Extensions are supplied for the four-bat reel (Order No. 48277 K) and for the six-bat reel (Order No. 48278 K).

5. In extreme cases it may be necessary to convert from power drive reel to ground drive reel. Conversion parts can be secured by Ordering No. 48496 K.

Standing tall grain with dropping heads that must be cut low or when standing grain is cut low to save straw.

1. Use the supplemental outside divider (Order No. ZDA-1656). *See Illust. 89.*

Grain piling and bridging on the feeder when cutting extremely heavy or tall grain or extremely viny crops.

1. Raise the platform if the machine is cutting too low in tall grain.

2. Reduce the width of cut.

3. Reduce the ground speed.

4. Use an auxiliary reel attachment (Order No. ZDA-1653).

Uneven feeding usually met in cutting crops with light, fluffy straw.

1. Move the reel back.

2. Make sure the reel bat hair pins furnished with the machine are properly adjusted.

Under extreme conditions, stalks may stick and hang in the concave grate holes when harvesting edible beans or soy beans.

1. Use special concave grate cover (blank) (Order No. 21703 K). *See Illust. 79.*

2. Under extreme conditions the special concave grate (blank) (Order No. 18427 K) may be used. *See Illust. 78.*

## HARVESTER THRESHER TROUBLE SHOOTING - Continued

| Trouble                                                                                                                                                                                                                         | Suggested Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Fan speed too high with light seed grains such as clover, grass, alfalfa, timothy, flax.</p> <p>Insufficient cylinder and concave action especially noticeable with crimson clover and flax resulting in poor threshing.</p> | <p>1. Adjust the fan drive pulley on the countershaft to slow down the fan.</p> <p>1. For threshing crops such as flax, crimson clover, etc. the use of the supplemental angle cylinder bars (smooth bars) (Order No. 19274 K) will often improve the work. See <i>Illust. 87</i>.</p> <p>2. The cylinder bar filler sheets (Order No. 20437 K) can be ordered separately. These filler sheets are supplied with the Flax attachment (ZDA-1151) which is recommended if any great amount of flax is to be harvested.</p> <p>3. If crimson clover is being threshed very extensively, the crimson clover attachment (ZDB-1153) is recommended.</p> <p>4. Use the notched cylinder bars to increase the aggressiveness of the cylinder. See "Back feeding and slugging of the cylinder".</p>                                                                                                                                                                                                  |
| <p>Back feeding, slugging, and wrapping of the cylinder in heavy, weedy, tangled, fluffy, or viny crops.</p>                                                                                                                    | <p>1. Supplemental notched cylinder bars will help when harvesting in heavy, weedy, tangled, fluffy, and viny crops which feed into the cylinder slowly, thus having a tendency to bunch in front of the cylinder or wind around it. The supplemental notched cylinder bars are provided in sets of six (Order No. 19275 K). Usually two bars are sufficient, however in more extreme cases all six bars should be used. When using two bars care must be taken to have them directly opposite each other, thus keeping the cylinder in balance. See page 57.</p> <p>2. In unusually severe cases of bunching in front of the cylinder or slugging of the cylinder, the special cylinder bar rakes (Order No. 19340 K) can be used. The cylinder bar rakes are supplied in sets of two and must be placed under the cylinder bars directly opposite each other to keep the cylinder in balance. See page 57.</p> <p>3. Use the special cylinder beater end shields (Order No. 19342 K).</p> |
| <p>Unthreshed heads.</p>                                                                                                                                                                                                        | <p>1. Clearance between the cylinder and concave may be too great. Lower the cylinder gradually until the straw is threshed clean. Do not lower more than necessary as the volume of the tailings will be increased if set too close.</p> <p>2. Cylinder speed may be too low or irregular. If the ground speed of the machine equipped with the power drive must be reduced frequently when passing through rough spots, shift the tractor to lower gear. DO NOT USE THE THROTTLE TO SLOW THE MACHINE.</p> <p>3. If the concave channel bars and the flat bars used in the concave are badly worn or uneven, they may be reversed, thereby obtaining a new edge.</p>                                                                                                                                                                                                                                                                                                                       |

(Continued on next page.)

## HARVESTER THRESHER TROUBLE SHOOTING - Continued

| Trouble                                          | Suggested Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unthreshed heads -<br>(continued).               | <p>4. When threshing beans, peas, etc., the special cylinder bar filler sheets (Order No. 20437 K) will be helpful.</p> <p>5. If the feeding is irregular, refer to "Uneven feeding usually experienced in cutting crops with light, fluffy straw". See page 67.</p> <p>6. With down, tangled, weedy grain, some unthreshed heads will pass through the cylinder due to the cushioning effect of matted straw and weeds. These heads must be caught at the chaffer and chaffer extension for return with the tailings. Too close setting of the cylinder and concave results in excessive tailings, crackage, and poor sample.</p> |
| Cracking grain (wheat, oats, rye, barley, etc.). | <p>1. Check the cylinder speed. If excessive, reduce to normal. See "Reference Chart" on pages 78 and 79.</p> <p>2. The cylinder and concave may be set too close. Raise a little at a time until the cracking is reduced to a minimum and unthreshed heads begin to appear at the chaffer extension.</p> <p>3. Increase the concave grate openings.</p> <p>4. If excessive grain is found in the tailings, increase the openings in the adjustable shoe sieve.</p> <p>5. If grain is blown into the tailings trough under the shoe sieve, reduce the air blast.</p>                                                               |
| Cracking beans, peas, etc.                       | <p>1. Reduce the cylinder speed. See "Reference Chart" on pages 78 and 79.</p> <p>2. Increase the concave grate openings.</p> <p>3. When beans are easily shelled, the use of the special cylinder bar filler sheets (Order No. 20437 K) will help.</p> <p>4. Use the edible bean attachment (ZDB-1218 with rigid type cylinder shaft sheave) (ZDA-1639 with slip clutch type cylinder shaft heave) for edible beans.</p> <p>5. Under extreme conditions, use the special concave grate (blank) (Order No. 18427 K).</p> <p>6. Attachment ZDA-1468 is recommended for harvesting soy beans when grown with corn.</p>               |
| Loss of grain over chaffer.                      | <p>1. Open the chaffer sieve.</p> <p>2. Open the chaffer extension.</p> <p>3. Raise the chaffer extension slightly.</p> <p>NOTE! Except on hilly ground the chaffer extension should be kept as nearly level as possible to obtain best results.</p> <p>4. Adjust the fan blast to get maximum agitation of the material on the chaffer without blowing the grain over.</p> <p>5. Too fast a ground speed in unusually heavy crops can overload the chaffer and cause poor separation.</p>                                                                                                                                         |



## HARVESTER THRESHER TROUBLE SHOOTING - Continued

| Trouble                                                                                                  | Suggested Remedy                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loss of grain over the straw racks.                                                                      | <ol style="list-style-type: none"> <li>1. Lower the separator check flap.</li> <li>2. Remove some of the straw rack rods.</li> <li>3. Open the concave grates.</li> <li>4. Make sure the A-frame is level. If not, adjust it at the tractor draw bar.</li> <li>5. With heavy loss use the special straw rack grain deflector (Order No. 16316 K).</li> </ol>                                                  |
| Weed seed, green sweet clover seed, or dirt in the sample.                                               | <ol style="list-style-type: none"> <li>1. Use the special shoe bottom screens.</li> </ol> <i>See page 54.</i>                                                                                                                                                                                                                                                                                                 |
| Heavy stalks in the sample prevalent when threshing in dry weedy conditions.                             | <ol style="list-style-type: none"> <li>1. Increase the clearance between the concave and the cylinder.</li> <li>2. Check the separator speed. If incorrect, adjust the engine speed as required.</li> <li>3. Make sure the A-frame is level. If not, adjust it at the tractor draw bar.</li> <li>4. Make sure the shoe sieve is at the proper level and in center position.</li> </ol>                        |
| Cleaning shoe overloaded with broken stems and stalks.                                                   | <ol style="list-style-type: none"> <li>1. Lower slightly the shoe sieve rear end.</li> <li>2. Check the separator speed. If incorrect, adjust the engine speed as required.</li> <li>3. When noticeable with clovers and grass crops, use the special wire screen covers for straw racks. <i>See page 58.</i> These screens are furnished with the crimson clover attachment (Order No. ZDB-1153).</li> </ol> |
| Overloading of the shoe sieve.                                                                           | <ol style="list-style-type: none"> <li>1. Check the separator speed. If incorrect, adjust the engine speed as required;</li> <li>2. Lower the chaffer extension.</li> <li>3. Increase the air blast.</li> <li>4. Increase the concave clearance until unthreshed heads appear.</li> </ol>                                                                                                                     |
| Caking of the grain pan dividers, thus reducing the efficiency of the grain pan.                         | <ol style="list-style-type: none"> <li>1. Clean the grain pan occasionally. It may be reached by removing the grain pan canvas front rod and lowering the canvas. Important! Watch this closely when harvesting soy beans or green crops.</li> </ol>                                                                                                                                                          |
| Excessive tailings.                                                                                      | <ol style="list-style-type: none"> <li>1. Reduce the openings in the chaffer and the chaffer extension.</li> <li>2. Lower the chaffer extension.</li> <li>3. Increase the concave clearance.</li> <li>4. Increase the air blast.</li> </ol>                                                                                                                                                                   |
| Mud caking in the grain or tailings elevator.                                                            | <ol style="list-style-type: none"> <li>1. Replace two regular flights in either the tailings or clean grain elevator conveyor chain with the special steel flights provided in sets of two (Order No. 28200 K). <i>See page 9.</i></li> </ol>                                                                                                                                                                 |
| Mud clogging between right wheel and separator post.                                                     | <ol style="list-style-type: none"> <li>1. Use the mud deflector attachment. (Order No. ZDA-1443).</li> </ol>                                                                                                                                                                                                                                                                                                  |
| Additional ground clearance required for machine when harvesting terraced lands, borders of fields, etc. | <ol style="list-style-type: none"> <li>1. Use the special raised axle attachment. The raised axle attachment is supplied for machines equipped with the power drive reel (Order No. ZDA-1159) and the ground drive reel (Order No. ZDA-1492).</li> </ol>                                                                                                                                                      |

## GENERAL INFORMATION

When stationary threshers were the only threshing machines in use, the "thresherman" did nothing but lubricate, adjust, and otherwise care for the thresher. He also directed the feeding of the machine when circumstances warranted or the crop was "tough" and hard threshing. You may recall that he insisted on feeding as evenly as possible at all times and, when threshing clover, grasses and other bulk crops, he insisted on feeding small bunches so the feed would be constant, though it required a great deal of extra work on the part of the men on the wagon or stack.

With the advent of the small Harvester-Thresher and the modern tractor, a new method of harvesting was introduced. Each owner of a Harvester-Thresher became a "thresherman", and even though he harvests for a neighbor or two, besides harvesting his own crop, he spends only a small part of the year being a "thresherman", as a rule too small a part to become thoroughly familiar with either his machine or the principles of threshing. It is therefore essential that the operator of a Harvester-Thresher study the instruction book carefully. Merely reading a line or two on setting the machine for some particular crop, will not as a rule obtain satisfactory results. There are a few fundamentals of threshing which must be understood.

1. The crop must be in threshable condition.

2. The machine must be adjusted to suit the particular crop being threshed.

3. Constant speed of the cylinder, fan, straw rack, and cleaning shoe is essential. Driving too fast or attempting to crowd the machine will result only in lost time and grain. In heavy, hard-threshing crops, it will often effect a saving of both seed and time to reduce the width of cut. Separating and cleaning adjustments will be less effective when you crowd the cylinder, thereby preventing its doing a complete job of removing the seed from the straw.

4. The cylinder and concave remove the seed from the seed pod or hull. Run the cylinder just fast enough and close enough to the concave to accomplish this. Running too fast or too close decreases the efficiency of the straw racks and cleaning shoe because more straw will be broken up into fine chaff which must be separated from the grain on the straw racks, chaffer, and adjustable shoe sieve.

5. The straw racks shake the threshed grain, chaff, and unthreshed pieces of heads out of the straw and pour this mixture of grain and chaff onto the grain pan at the front end of the chaffer and from there it moves onto the chaffer.

Unless one of the following conditions is present there should be no appreciable amount of threshed grain passing out with the straw over the straw rack:

- (A) Machine is being over-fed by too fast ground travel.
- (B) Cutting too low in tall grain.
- (C) A heavy growth has fallen down making it necessary to handle excessive straw.
- (D) Or when threshing from a windrow containing more than a regular width cut.
- (E) Tractor hitch too high or too low.
- (F) Cutting up steep hillsides.

6. The chaffer supports the threshed grain, chaff, and unthreshed heads until the air blast from the fan completes separation. The fan plays an important part in this since the air blast must be of sufficient strength to raise the chaff on the chaffer and thus permit the threshed grain to fall through onto the adjustable shoe sieve.

Here again the feeding of the machine is reflected in the job done. Irregular feeding causes the quantity of chaff and grain on the chaffer to vary. When the flow is light, threshed grain may be blown out with the chaff. When the flow is heavy, a great deal of chaff may fall through onto the adjustable shoe sieve. Enough wind should be used to keep the chaff moving on the chaffer.

The chaffer should be open enough to prevent threshed grain from going out with the chaff but not open enough to permit straw and weed joints to fall onto the adjustable shoe sieve as they will then go into the tailings, back through the cylinder and on the return over the chaffer, be even smaller and harder to keep out of the threshed grain.

When threshing crops such as beans, peas, and vetch, the machine should always be comparatively full if the seeds are of a variety easily cracked. In light crops this can be done by driving the tractor slightly faster, or by windrowing the crop, throwing two windrows together with a Side-Delivery Rake. Light uneven feeding does not provide enough straw and chaff to cushion the seed, and excess cracking may result.

Just the opposite will apply when threshing clovers, grasses, grain sorghums, and other crops which tend to "load" the chaffer and adjustable shoe sieve. Reducing the travel speed of the tractor or narrowing the width of the cut will often increase materially the amount of seed being saved, and also make possible a cleaner sample.

Adjustments for harvesting always start with the sieve in a level position unless otherwise specified for that particular crop under "HARVESTING INFORMATION".



## HARVESTING INFORMATION

The following information supplements that are given in the chart shown on pages 78 and 79. Crops are numbered and grouped for ready reference. Where special attachments are mentioned, additional instructions will be found packed with them.

### 1. ALFALFA

Alfalfa may be harvested as a standing crop, mowed and picked up from a swath, or raked into windrows. The Windrow Pickup attachment should be used to pick up the dry hay from the swath or windrow. In localities where high winds are prevalent, the swath method is preferred since the wind often rolls the windrows together. Harvesting as a standing crop is the least expensive method, but weedy or unevenly ripened crops often make it desirable to cut and cure the crop before threshing.

The 1/10" round hole shoe sieve (17773 KA) can be used in the lower position. Some operators prefer to remove the adjustable shoe sieve and use only the 1/10" round hole shoe sieve, while others prefer using the fine adjustable shoe sieve (18547 K).

Adjustment: Open the chaffer one-third, raise the chaffer extension halfway up on the height adjustment and open it one-half. Open the adjustable shoe sieve one-fourth and the wind regulator one-fourth to one-third.

An alfalfa attachment (ZDA-1161) is available. This attachment consists of the 1/10" round hole shoe sieve (17773 KA) and a special concave grate (17140 K).

### 2. BARLEY

Barley may be harvested as a standing crop or mowed and picked up from a swath with the windrow pickup attachment.

Adjustment: Set the chaffer one-half to two-thirds open with the chaffer extension raised two-thirds and open two-thirds. Open the adjustable shoe sieve one-fourth unless the barley is to be used for malting. For malting barley, open one or two notches more since it should not be bearded as closely as barley to be used for seed or feed purposes. It may often be necessary to reduce the cylinder speed to around 1000 R.P.M. for malting barley so as not to "skin" the seed. For instructions on changing cylinder speed see page 30.

Set the wind control one-half open to start. Increase the wind a notch at a time until you are sure clear barley is being blown over; then close one notch. Due to the beards, more wind is required for separating barley than any similar crop. As a rule more barley is carried over with the chaff due to lack of wind than is blown over by too much wind.

### 3. BEANS

Two general classes of beans are threshed; the edible beans and the soy beans. The most common classes of edible beans are listed in the chart on page 78. They vary in size and shape from the flat Baby Lima and the large Great Northern to the small round Pea Bean. Some are easily threshed and crack easily; others are difficult to knock out of the pod and also crack easily. Some do not crack easily.

The common practice with all edible beans is to pull them and leave them to dry in the windrows. They are then picked up and threshed by the Harvester-Thresher equipped with a windrow pickup attachment. If the operator is careful to pull the beans when thoroughly ripened, usually in the morning while the dew is still on, he can thresh them that afternoon or possibly the next afternoon with a minimum of loss from both shattering and cracking. When beans lie too long in the windrow, the crackage will be higher. If pulled and threshed too green, they spoil due to the high moisture content. Experience will soon teach an operator how many acres he can handle with his machine. Attempting to handle too much acreage always results in dissatisfaction because all of the beans can not be threshed when they are in the best threshing condition.

Beans also grow differently. Some have short bushes, others are inclined to vine. As a rule the more vine, the less crackage due to the cushioning effect of the vine. Some have short, plump, well-filled pods that are easily opened; others have long or flat pods not easily opened. A slow cylinder speed is most desirable, but tough beans will require more speed. Beans most easily cracked can be handled best by using the blank concave (18427 K) removing the rear two or perhaps all of

(Continued on next page)



## HARVESTING INFORMATION - Continued

the concave bars. If the beans are easily shelled no extra bars will be required on the cylinder and it may be possible to raise the cylinder to the maximum clearance. Since the pulled beans contain considerable dirt it is advisable to use the special shoe bottom screen (18534 K) in place of the blank in the bottom of the shoe. When the beans are extremely large the special concave grate (21188 K) with 5/8 x 1-1/4" slotted holes can be used. A special 1/2" round hole shoe sieve (22010 KA) is also available, if desired.

**Adjustment:** Open the chaffer one-fourth to one-half and the adjustable shoe sieve one-fifth to one-half depending on the size of the beans to be harvested. Raise the chaffer extension one-half to three-fourths up in the slots and open one-half to three-fourths. Set the wind regulator three-fourths to full open.

Two types of edible bean attachments (ZDB-1218 with rigid type cylinder shaft sheave or ZDA 1639 with slip clutch type cylinder shaft sheave) are available. Included in either attachment is: the special concave grate (17142 K) with 3/8 x 1-1/4" slotted holes and the special shoe bottom screen (18534 K).

- 3. BEANS - Baby Lima
- 4. BEANS - Blackeye
- 5. BEANS - California Pink
- 6. BEANS - Cranberry
- 7. BEANS - Great Northern
- 8. BEANS - Kidney
- 9. BEANS - Marrow
- 10. BEANS - Pea
- 11. BEANS - Pinto
- 12. BEANS - Yelloweye

} Read instructions covered under  
Beans on page 72 and 73.

- 13. BEANS - Soy

There are even more varieties of soy than edible beans. Soy beans are usually harvested as a standing crop. They are not so easily cracked as a rule, but the heavier growth and the unevenly ripened pods prevalent with some varieties make them difficult to thresh. Proper adjustment of the machine depends on the variety of soy beans to be threshed. Easily threshed varieties or well ripened, dry beans require a low cylinder speed, the fewest number of bars on the concave, perhaps the special blank grate cover (21703 K), or possibly the special blank concave grate (18427 K). For instructions to change cylinder speed, see page 30. The regular shoe sieve can also be replaced by a special shoe sieve (17783 KA) with 3/8" round holes. See page 47. Tough threshing varieties may require as much as 680 R.P.M. cylinder speed or even more. Use only a sufficient number of concave bars and a high enough cylinder speed to thresh the beans from the pod.

**Adjustment:** The same general adjustment as used for edible beans will also apply to soy beans.

An attachment for harvesting soy beans when grown with corn (ZDA-1468) is available. This attachment consists of: Special knife guards, reel bats and tie straps, fan drum bottom shield, upper feed conveyor drive belt shield cover, feeder drive belt guard, upper feeder canvas guide, feed conveyor upper bottom, and reel drive shaft with slip clutch.

- 14. BEETS - Garden

Seed stalks are cut and bunched by hand. The machine is pulled thru the field and small bunches are pitched onto the feeder. The plant breaks up badly, so it is often necessary to cover the straw racks with special mesh wire screen covers (front screen 18833 K and rear screen 18832 K). Six each of these screens are required. See *Illust. 88*. The seeds do not crack easily so heavy tailings can be carried, if necessary, in order to catch all the seed. If desired, the special 15/64" round hole shoe sieve (17781 KA) can be used.

**Adjustment:** Set the chaffer one-half open, the adjustable shoe sieve one-half open, and the wind regulator one-half open.

- 15. BEETS - Sugar

Seed is usually grown on irrigated beds, two rows to the bed. It is cut and bunched by hand. The bunches can be pitched into the machine as it is drawn thru the field. If the bunches are kept small and are piled lengthwise in the beds, the windrow pickup attachment can be used. This will reduce hand labor as well as loss of seed from handling. Equip and adjust as for Garden Beets.

## HARVESTING INFORMATION - Continued

### 16. BUCKWHEAT

Buckwheat is usually harvested as a standing crop. If thoroughly ripened, it is easily threshed.

Adjustment: Set the chaffer two-thirds open, the adjustable shoe sieve one-fourth open, and the wind regulator one-fourth open.

### 17. CABBAGE

Seed stalks are cut and bunched by hand. When thoroughly dry, the bunches are pitched onto the feeder canvas of the machine as it is drawn thru the field. Feed as small bunches as possible to obtain the best results.

Adjustment: Set the chaffer two-thirds open, the adjustable shoe sieve one-third open, and the wind regulator one-third open.

### 18. CARROTS

Carrots are usually cut and bunched by hand. As the machine is drawn thru the field, the stalks are pitched onto the feeder canvas in small bunches. Since the stalks break up easily, it will often materially aid separation to cover the straw racks with the special mesh wire screen covers (front screen 18833 K and rear screen 18832 K). Six each of these screens are required. See *Illust. 88*.

Adjustment: Set the chaffer one-third open, the adjustable shoe sieve one-fourth to one-third open, and very little opening on the wind regulator.

### 19. CLOVER - Alsike

Alsike clover is usually cut and windrowed or left in the swath to dry. Then the windrow pickup attachment is used. The crop should be cut when 75% of the heads are ripe or a great deal of the seed will be shattered when cutting. Use a 1/2" special shoe sieve (17775 KA) below or in place of the regular adjustable shoe sieve.

Adjustment: Set the chaffer one-third open, the adjustable shoe sieve one-fourth open, and use very little opening on the wind regulator.

A clover and timothy attachment (ZDA-1162) consisting of the 1/12" round hole shoe sieve (17775 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) can be obtained.

### 20. CLOVER - Bur

This crop is usually grown on old cotton fields and vines on the cotton stalks making a very coarse mass to handle. A slow reel speed should be used to prevent shattering of the seed. The burs do not ripen evenly, so there will be some green material to tail over the chaffer as well as some green seed in with the dry seed. The seed must be carefully dried to prevent heating. Sometimes burs are allowed to drop off the plants, then are gathered up, and the burs only threshed. However, it is difficult to obtain clean seed. Use the special 1/16" round hole shoe sieve (18690 KA) in the lower position.

Adjustment: Open the chaffer one-third to one-half, the adjustable shoe sieve one-fourth, and use little opening on the wind regulator.

A clover attachment (ZDA-1164) consisting of the 1/16" round hole shoe sieve (18690 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) is available.

### 21. CLOVER - Crimson

Crimson clover is harvested standing or cut and cured in swaths or windrows.

**STANDING CROP** - Harvest as soon as the heads are ripe and dry, since a heavy rain will cause the ripe heads to shatter. Some of the hay may be green and juicy. Since the seed is very difficult to knock out, the machine should travel at a slow speed with a narrow width of cut if dry, mature seed is being crowded over with the chaff. A poor job of harvesting is usually the result of attempting to harvest before the crop is ripe, too soon after a rainfall, or at too high travel speed.

(Continued on next page)



## HARVESTING INFORMATION - Continued

### 21. CLOVER - Crimson (Continued)

Adjustment: Open the chaffer one-half, the special adjustable shoe sieve one-fourth, and wind regulators one-half. Carry the chaffer extension about level with the chaffer to tail over the green hay. For dry clover, raise the chaffer extension and open it two-thirds.

If desired, a 7/64" round hole shoe sieve (17777 K) can be used. However, when sufficient acreage is to be harvested, the crimson clover attachment (ZDB-1153) is recommended. This attachment includes two rear concave bars, a fine adjustable shoe sieve (18547 K), six straw rack rear section screens (18832 K), six straw rack front section screens (18833 K) and the 5/32 x 3/4" slotted hole concave grate (17140 K).

**CLOVER IN SWATHS OR WINDROWS** - When harvesting by this method, the swath should not be over five feet wide. Windrows should be made small as the seed is very difficult to rub out and a heavy windrow will cause a great deal of seed to be pushed out with the chaff. Well dried hay breaks up and causes a heavy chaff. However, if the machine is not crowded, a heavy tailings can be carried and a large percentage of the seed saved.

### 22. CLOVER - Hop

Hop clover should be cut and windrowed. When well dried this crop is easily threshed. It is suggested that the 1/16" round hole shoe sieve (18690 KA) be used in the shoe.

Adjustment: Open the chaffer one-third, the adjustable shoe sieve one-fourth, and almost close the wind regulator.

A clover attachment (ZDA-1164) consisting of 1/16" round hole shoe sieve (18690 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) is available.

### 23. CLOVER - Ladino

Since Ladino clover grows flat on the ground, it must be mowed and windrowed. Pans are often used on the back of the mower bar to catch shattered seed. Use the windrow pickup attachment, and thresh the crop as soon as it is dry. Use the 1/16" round hole shoe sieve (18690 KA) in the shoe.

Adjustment: Open the chaffer one-third, and adjustable shoe sieve one-fourth, and almost close the wind regulator.

A clover attachment (ZDA-1164) consisting of the 1/16" round hole shoe sieve (18690 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) is available.

### 24. CLOVER - Lappaceum

Lappaceum clover is at present found in the United States only in the heavy, black, clay soil of Alabama. On unfertilized soil Lappaceum clover is very short, while on well fertilized soil, the crop may grow as high as eighteen inches. In either case it is advisable to windrow the crop. Allow the clover to dry thoroughly, then thresh using the windrow pickup attachment. It is suggested that the 1/16" round hole shoe sieve (18690 KA) be used in the shoe.

Adjustment: Open the chaffer one-third, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth.

A clover attachment (ZDA-1164) consisting of the 1/16" round hole shoe sieve (18690 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) is obtainable.

### 25. CLOVER - Mammoth

Mammoth clover can be harvested, windrowed, or picked up from the swath. The swath is preferred in territories where high winds are common since they roll the windrows and make picking up difficult. Much seed may also be lost by the wind rolling the windrows. A better seed crop will be obtained if mammoth clover is clipped or pastured in May. A 1/12" round hole shoe sieve (17775 KA) should be used in the lower position.

(Continued on next page)



## HARVESTING INFORMATION - Continued

### 25. CLOVER - Mammoth - (Continued)

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth.

A clover and timothy attachment (ZDA-1162) consisting of the 1/12" round hole shoe sieve (17775 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) can be obtained.

### 26. CLOVER - Red

Red clover should be cut for seed when the heads of the plant are brown and the seeds have a violet tint. In most localities the cutting is done when 75 to 80% of the heads are brown. In some irrigated sections, however, the crop is permitted to stand until the majority of the heads are black. The red clover seed crop is usually the second crop and is cut late in August or September; the June cutting which usually contains very little seed, having been used for hay. Clover, either in the windrow or in the swath, should be picked up and threshed just as soon as it is thoroughly dried. A 1/12" round hole shoe sieve (17775 KA) should be used in the lower position.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth to one-third.

A clover and timothy attachment (ZDA-1162) consisting of the 1/12" round hole shoe sieve (17775 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) can be obtained.

### 27. CLOVER - Sweet

Sweet clover is usually harvested as a standing crop. The dwarf varieties are best for combining. Larger varieties should be clipped before they begin to bloom. The seed will not all be ripe at the same time, so harvesting should begin as soon as a 75% of the pods have turned dark brown. A slow reel speed should be used to prevent shattering of the seed. A 1/12" round hole shoe sieve (17775 KA) should be used in the lower position.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth to one-third.

A clover and timothy attachment (ZDA-1162) consisting of the 1/12" round hole shoe sieve (17775 KA) and a 5/32 x 3/4" slotted hole concave grate (17140 K) can be obtained.

### 28. CLOVER - White and White Dutch

Follow as specified for Ladino Clover (item 23).

### 29. CROTOLARIA

Crotolaria is usually harvested as a standing crop. Since the seed shatters so easily a slow speed driving sprocket should be used on the reel. When harvesting, cut as high as possible. If difficult to obtain a clean sample, use the special 3/8" round hole shoe sieve (17783 KA).

Adjustment: Set the chaffer one-third open, the adjustable shoe sieve one-half open, and the wind regulator one-half open.

### 30. FENUGREEK

Fenugreek is grown alone or with a supporting crop of wheat or barley. When grown alone it is mowed, windrowed, and allowed to dry thoroughly before being picked up with a pickup attachment and threshed. Since the seed pods do not all ripen at one time, this method of handling produces the best seed. When Fenugreek is grown with a grain crop, the two are harvested together as a standing crop.

Adjustment: Set the chaffer one-third open, the adjustable shoe sieve one-half open, and the wind regulator one-half open.

### 31. FLAX

Flax is usually cut and windrowed. If harvested as a standing crop, there will

## HARVESTING INFORMATION - Continued

### 31. FLAX - Continued

be seed pods not matured. The windrowed, well dried crop is usually in better threshing condition. For best results, use the flax attachment (ZDA-1151). This attachment consists of: two rear concave bars (18683 K), six cylinder bar filler sheets (19257 K), one 5/32 x 3/4" slotted hole concave grate (17140 KA), and twenty-four cylinder bar filler sheet support brackets (twelve left 19256 K) and twelve right 19255 K). Six supplemental angle cylinder bars (smooth bars) may also be obtained under ordering number 19274 K. If desired, use the special 3/16" round hole shoe sieve (17779 KA).

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-third to one-half.

### 32. GRASS - Bahia

Bahia grass should be cut and windrowed when the seed is most free from fungus since the seed matures throughout the warm season. Other pasture grass is usually mixed with Bahia grass but a mixture is desirable since it tends to reduce the fungus. When thoroughly dried, the windrows can be picked up and threshed with the windrow pickup attachment.

Adjustment: Set the chaffer one-half open, the adjustable shoe sieve one-fourth open. Use very little wind.

### 33. GRASS - Buffalo

It is not practical to harvest native Buffalo grass. Commercial seed is produced in grass nurseries where the grass is grown in rows and cultivated, then harvested as a standing crop. The seed shatters easily so use a slow reel speed.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth and use little wind.

### 34. GRASS - Bermuda

Common Bermuda grass is a very low growing plant, often attaining a height of only a few inches. This makes it difficult to cut much of the seed stems as many may be too low to reach with the cutter bar. Giant Bermuda grass grows to a height of from 3 to 5 feet but produces seed sparingly and in only a few areas. Use the special 3/32 x 1/2" slotted hole shoe sieve (18514 KA) in lower position.

Adjustment: Open the chaffer one-third, and the adjustable shoe sieve one-fourth. The wind regulator can be completely closed.

A grass attachment (ZDA-1163) is available. This attachment consists of a 5/32 x 3/4" slotted hole concave grate (17140 K) and the 5/32 x 1/2" slotted hole shoe sieve (18514 KA).

### 35. GRASS - Blue

When Blue Grass seed is ripe it shatters very easily. If left standing too long the wind will cause much of the seed to be lost. When harvesting Blue Grass, use a slow reel speed and cut as high as possible since the stem will be green even though the seed is ripe. Use the special 3/32 x 1/2" slotted hole shoe sieve (18514 KA) should be used in the lower position.

Adjustment: Open the chaffer one-half and the adjustable shoe sieve one-fourth. The wind regulator should be almost closed.

A grass attachment (ZDA-1163) is available. This attachment consists of a 5/32 x 3/4" slotted hole concave grate (17140 K) and the 3/32 x 1/2" slotted hole shoe sieve (18514 KA).

### 36. GRASS - Blue Stem

Blue Stem grass is usually harvested as a standing crop. It grows tall and coarse with its seed stems at the top of the plant so the feeder can be raised and miss most of the green grass.

Adjustment: Open the chaffer two-thirds and the adjustable shoe sieve one-half. The wind regulator should be almost closed.

## HANDY REFERENCE CHART FOR THRESHING VARIOUS GRAINS

(For Additional Concave Grates, see page 39.) (For Additional Screens and Sieves, see pages 156 and 157.)

| NO. | KIND OF GRAIN<br>OR SEEDS | CYLINDER<br>SPEED<br>RANGE | NO. OF<br>CONCAVE<br>BARS | FEED PLATE<br>CLEARANCE | CONCAVE<br>CLEARANCE | CONCAVE GRATE |          | SPECIAL SIEVE      |          |
|-----|---------------------------|----------------------------|---------------------------|-------------------------|----------------------|---------------|----------|--------------------|----------|
|     |                           |                            |                           |                         |                      | SIZE OF HOLE  | PART NO. | SIZE OF HOLE       | PART NO. |
| 1   | Alfalfa                   | 1300-1500                  | 0 - 4                     | 1/4" - 1/2"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/10" Round        | 17773 KA |
| 2   | Barley                    | 1250-1400                  | 2 - 4                     | 3/8" - 3/4"             | 3/16" - 5/16"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 3   | Beans-Baby Lima           | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 4   | " -Blackeye               | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 5   | " -California Pink        | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 6   | " -Cranberry              | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 7   | " -Great Northern         | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 3/8" - 7/8"          | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 8   | " -Kidney                 | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 9   | " -Marrow                 | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 10  | " -Pea                    | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 11  | " -Pinto                  | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 12  | " -Yelloweye              | 400-600                    | 0 - 2                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 13  | " -Soy                    | 400-600                    | 0 - 4                     | 1/2" - 7/8"             | 5/16" - 7/8"         | 3/8" x 1-1/4" | 17139 K  | None               | .....    |
| 14  | Beets-Garden              | 950-1050                   | 0 - 4                     | 3/8" - 3/4"             | 1/16" - 5/32"        | 1/4" x 1"     | 17139 K  | 15/64" Round       | 17781 KA |
| 15  | " -Sugar                  | 950-1050                   | 0 - 4                     | 3/8" - 3/4"             | 1/16" - 1/4"         | 1/4" x 1"     | 17139 K  | 15/64" Round       | 17781 KA |
| 16  | Buckwheat                 | 950-1050                   | 0 - 2                     | 3/8" - 3/4"             | 3/16" - 5/16"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 17  | Cabbage                   | 950-1050                   | 2 - 4                     | 3/8" - 5/8"             | 1/8" - 5/16"         | 1/4" x 1"     | 17139 K  | 5/32" Round        | 18516 KA |
| 18  | Carrots                   | 950-1050                   | 2 - 4                     | 1/4" - 5/8"             | 5/16" - 3/4"         | 1/4" x 1"     | 17139 K  | None               | .....    |
| 19  | Clover-Alsike             | 1300-1500                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/12" Round        | .....    |
| 20  | " -Bur                    | 1300-1500                  | 2 - 4                     | 3/8" - 5/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/16" Round        | 17775 KA |
| 21  | " -Crimson                | 1500-1700                  | 5                         | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 13/16" Adjustable  | 18690 KA |
| 22  | " -Hop                    | 1300-1500                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/16" Round        | 18547 K  |
| 23  | " -Ladino                 | 1300-1500                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 1/4"         | 5/32" x 3/4"  | 17140 K  | 1/16" Round        | 18690 KA |
| 24  | " -Lappaceum              | 1300-1500                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/16" Round        | 18690 KA |
| 25  | " -Mammoth                | 1300-1500                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/12" Round        | 17775 KA |
| 26  | " -Red                    | 1300-1500                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/12" Round        | 17775 KA |
| 27  | " -Sweet                  | 1300-1500                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 1/12" Round        | 17775 KA |
| 28  | " -White                  | 1300-1500                  | 2 - 4                     | 1/2" - 3/4"             | 3/16" - 5/16"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 29  | Crotalaria                | 700-1200                   | 0 - 4                     | 1/2" - 3/4"             | 3/16" - 5/16"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 30  | Fenugreek                 | 950-1200                   | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 3/16" Round        | .....    |
| 31  | Flax                      | 1300-1300                  | 2 - 5                     | 5/16" - 1/2"            | 1/16" - 1/4"         | 1/4" x 1"     | 17139 K  | None               | 17779 KA |
| 32  | Grass-Bahia               | 1000-1300                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 33  | " -Buffalo                | 1300-1400                  | 2 - 4                     | 5/16" - 3/8"            | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 3/32" x 1/2" Slots | .....    |
| 34  | " -Bermuda                | 1300-1400                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | 3/32" x 1/2" Slots | 18514 KA |
| 35  | " -Blue                   | 1300-1400                  | 2 - 4                     | 1/4" - 3/8"             | 1/16" - 5/32"        | 5/32" x 3/4"  | 17140 K  | None               | 18514 KA |
| 36  | " -Blue Stem              | 1300-1400                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 1/8"         | 1/4" x 1"     | 17139 K  | None               | .....    |
| 37  | " -Brome                  | 1300-1400                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 1/8"         | 1/4" x 1"     | 17139 K  | None               | .....    |
| 38  | " -Canary                 | 1300-1400                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 5/32"        | 1/4" x 1"     | 17139 K  | None               | .....    |
| 39  | " -Carpet                 | 1300-1400                  | 2 - 4                     | 3/8" - 1/2"             | 1/16" - 1/4"         | 5/32" x 3/4"  | 17140 K  | 3/32" x 1/2" Slots | 18514 KA |
| 40  | " -Crested Wheat          | 1200-1300                  | 2 - 4                     | 1/2" - 5/8"             | 3/32" - 3/16"        | 1/4" x 1"     | 17139 K  | 3/32" x 1/2" Slots | 18514 KA |



## HANDY REFERENCE CHART FOR THRESHING VARIOUS GRAINS - Continued

(For Additional Concave Grates, see page 39.) (For Additional Screens and Sieves, see pages 156 and 157.)

| NO. | KIND OF GRAIN<br>OR SEEDS | CYLINDER<br>SPEED<br>RANGE | NO. OF<br>CONCAVE<br>BARS | FEED PLATE<br>CLEARANCE | CONCAVE<br>CLEARANCE | CONCAVE GRATE |          | SPECIAL SIEVE      |          |
|-----|---------------------------|----------------------------|---------------------------|-------------------------|----------------------|---------------|----------|--------------------|----------|
|     |                           |                            |                           |                         |                      | SIZE OF HOLE  | PART NO. | SIZE OF HOLE       | PART NO. |
| 41  | Grass-Dallis              | 1200-1300                  | 2 - 4                     | 3/8" - 1/2"             | 1/16"-1/4"           | 1/4" x 1"     | 17139 K  | None               | .....    |
| 42  | " - Fescue                | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 1/16"-1/8"           | 1/4" x 1"     | 17139 K  | 3/32" x 1/2" Slots | 18514 KA |
| 43  | " - Johnson               | 1200-1300                  | 2 - 4                     | 3/8" - 1/2"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 44  | " - Millet                | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 3/32"-3/16"          | 1/4" x 1"     | 17139 K  | 9/64" Round        | 18518 KA |
| 45  | " - Orchard               | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | 3/32" x 1/2" Slots | 18514 KA |
| 46  | " - Red Top               | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 1/16"-5/32"          | 5/32" x 3/4"  | 17139 K  | 22 x 22" Wire      | 19118 K  |
| 47  | " - Rye                   | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 3/32"-1/8"           | 1/4" x 1"     | 17140 K  | None               | .....    |
| 48  | " - Sudan                 | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 49  | " - Timothy               | 1200-1300                  | 2 - 4                     | 1/4" - 3/8"             | 3/32"-9/32"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 50  | Lespedeza-Korean          | 650-800                    | 2 - 4                     | 3/8" - 1"               | 1/16"-9/32"          | 5/32" x 3/4"  | 17140 K  | 1/12" Round        | 17775 KA |
| 51  | " - Servicea.             | 700-950                    | 2 - 4                     | 1/4" - 3/4"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | 5/32" Round        | 18516 KA |
| 52  | Lettuce                   | 950-1050                   | 2 - 4                     | 1/4" - 3/8"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | 5/32" Round        | 18516 KA |
| 53  | Mustard                   | 1300-1400                  | 2 - 4                     | 1/2" - 5/8"             | 1/16"-5/32"          | 1/4" x 1"     | 17139 K  | 1/12" Round        | 17775 KA |
| 54  | Oats                      | 1300-1400                  | 2 - 4                     | 1/2" - 3/4"             | 3/16"-9/16"          | 1/4" x 1"     | 17139 K  | 1/12" Round        | 17775 KA |
| 55  | Onion                     | 950-1050                   | 2 - 4                     | 1/4" - 3/8"             | 1/16"-3/16"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 56  | Okra                      | 950-1050                   | 2 - 4                     | 1/2" - 3/4"             | 1/16"-1/4"           | 1/4" x 1"     | 17139 K  | None               | .....    |
| 57  | Peas-Austrian             | 500-600                    | 1 - 4                     | 3/8" - 5/8"             | 5/16"-3/8"           | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 58  | " - Garden                | 400-500                    | 1 - 2                     | 3/8" - 5/8"             | 5/16"-1/2"           | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 59  | " - New Era               | 400-500                    | 1 - 2                     | 1/2" - 5/8"             | 5/16"-1/2"           | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 60  | " - Whipporwill           | 400-500                    | 1 - 2                     | 1/2" - 5/8"             | 5/16"-1/2"           | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 61  | " - Field                 | 400-600                    | 1 - 2                     | 1/2" - 5/8"             | 5/16"-3/4"           | 3/8" x 1-1/4" | 17142 K  | None               | .....    |
| 62  | Parsnip                   | 400-600                    | 2 - 4                     | 1/2" - 5/8"             | 3/32"-5/16"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 63  | Radish                    | 1100-1200                  | 2 - 4                     | 3/8" - 1/2"             | 3/32"-5/16"          | 1/4" x 1"     | 17139 K  | 5/32" Round        | 18516 KA |
| 64  | Rice                      | 1000-1300                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/16"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 65  | Rye                       | 1200-1300                  | 2 - 4                     | 3/8" - 1/2"             | 3/16"-5/16"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 66  | Grain Sorghum-Kafir       | 950-1050                   | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 67  | " - Milo                  | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 68  | " - Feterita              | 1050-1200                  | 2 - 4                     | 1/2" - 3/4"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 69  | " - Hegari                | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 70  | " - Darso                 | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 71  | " - Durra                 | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 72  | " - Schrock               | 1050-1200                  | 2 - 4                     | 1/2" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 73  | " - Hybrids               | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 74  | " - Sorgo                 | 1050-1200                  | 2 - 4                     | 3/8" - 5/8"             | 3/16"-5/8"           | 1/4" x 1"     | 17139 K  | 7/32" Round        | 19116 KA |
| 75  | Spelt                     | 1200-1300                  | 1 - 4                     | 1/4" - 3/4"             | 3/16"-5/16"          | 1/4" x 1"     | 17139 K  | None               | .....    |
| 76  | Spinach                   | 1200-1300                  | 1 - 4                     | 3/8" - 5/8"             | 3/32"-3/16"          | 1/4" x 1"     | 17139 K  | 9/64" Round        | 18518 KA |
| 77  | Sunflower                 | 950-1050                   | 1 - 4                     | 1/2" - 3/4"             | 3/32"-3/8"           | 1/4" x 1"     | 17139 K  | None               | .....    |
| 78  | Turnip                    | 1300-1400                  | 2 - 4                     | 3/8" - 1/2"             | 3/32"-5/16"          | 1/4" x 1"     | 17139 K  | 5/32" Round        | 18516 KA |
| 79  | Vetch                     | 950-1050                   | 1 - 2                     | 3/8" - 5/8"             | 1/4" - 9/16"         | 1/4" x 1"     | 17139 K  | None               | .....    |
| 80  | Wheat                     | 950-1600                   | 1 - 5                     | 1/4" - 5/8"             | 3/16"-5/16"          | 1/4" x 1"     | 17139 K  | 15/64" Round       | 17781 KA |

## HARVESTING INFORMATION - Continued

## 37. GRASS - Brome

Brome grass is harvested as a standing crop. When ready to harvest, the seed stem will be dry about 4" down from the head. Some of the seed may be shattering. Raise the feeder so only the heads are cut off. The remainder can be cut for hay.

Adjustment: Open the chaffer wide. Raise the chaffer extension and open wide. Open the adjustable shoe sieve three-fourths. Close the wind regulator.

If the crop is heavy, narrow the out since the elevators will tend to choke and good seed will be pushed over the chaffer extension. Commercial seed commonly contains 10 to 20% chaff. Seed from the Harvester-Thresher may contain 20 to 50%.

## 38. GRASS - Canary

Canary grass is harvested as a standing crop. The seed stems are usually 3-1/4 to 4-1/2 feet high with the seed all in the plume at the top of the stem. By raising the feeder, very little of the green grass may be handled. The seeds ripen from the tip of the head downward and fall out as soon as they are ripe. Use a slow reel speed. Use the special 1/16 x 3/4" slotted hole shoe sieve (18510 KA) in the lower position.

Adjustment: Open the chaffer one-half, and the adjustable shoe sieve one-fourth. The wind regulator should be almost closed.

## 39. GRASS - Carpet

Carpet grass spreads rapidly, rooting at every joint, thus making a compact turf. The seed stems are slender but may grow from 12 to 24" high. A heavy crop may be difficult to cut even though the stems are still green when the seed is ripe. The crop is usually mowed and windrowed with a windrower attachment on the mower. The seed shatters easily so the hay should not be handled more than necessary. Carpet grass is sometimes harvested as a standing crop but more often it is cut and windrowed, then picked up with a pickup attachment on the Harvester-Thresher. A slower speed than that shown on the chart can be used for dry windrowed grass to minimize the breaking up of the dry stems and reduce the amount of chaff. Use the special 3/32 x 1/2" slotted hole shoe sieve (18514 KA) in the lower position.

Adjustment: Open the chaffer one-half and the adjustable shoe sieve one-fourth. The wind regulator should be almost closed.

A grass attachment (ZDA-1163) is available. This attachment consists of a 5/32 x 3/4" slotted hole concave grate (17140 K) and the 3/32 x 1/2" slotted hole shoe sieve (18514 KA).

## 40.- GRASS - Crested Wheat

Harvest as a standing crop since under favorable conditions it grows to a height of from 2 to 3-1/2 feet. The seed will ripen while the stem is still green so cut high enough to get only the dry stem and head. The seed shatters easily so use a chart in order to keep from chopping up the straw and overloading the chaffer. Use a special 3/32 x 1/2" slotted hole shoe sieve (18514 K) in the lower position.

Adjustment: Open the chaffer one-half and the adjustable shoe sieve one-fourth. The wind regulator should be almost closed.

## 41. GRASS - Dallis

Mature Dallis grass has a tendency to fall down, tangle, and mat. Seed will be mature while the remainder of the plant is green. It can be harvested as a standing crop if it stands up well enough. Usually it is necessary to cut with a mower equipped with a windrowing attachment. Windrows should be small so they will dry rapidly since the seed usually matures when the weather is inclined to be unsettled. Fungus is often present on the mature plant and seed should be harvested when there is a minimum of fungus. Native Southern seed is often low in germination.

Adjustment: Open the chaffer one-half to two-thirds, and adjustable shoe sieve one-fourth to one-third. Very little, if any, wind will be required.

## HARVESTING INFORMATION - Continued

### 42. GRASS - Fescue

Fescue grass should be harvested as a standing crop. It should be cut for seed as soon as the field assumes a yellowish-brown color and the heads begin to droop from the weight of the seed. Use the special 3/32 x 1/2" slotted hole shoe sieve (18514 KA) in the lower position.

Adjustment: Set the chaffer one-half open, the adjustable shoe sieve one-third open, and the wind regulator one-fourth open.

### 43. GRASS - Johnson

Johnson grass is usually harvested as a standing crop. Due to rank growth it is difficult to harvest. Juice from the green vegetation makes careful drying of the seed essential besides adding to the task of separation while threshing.

Adjustment: Set the chaffer one-half open, the adjustable shoe sieve one-third open, and the wind regulator one-third to one-half open.

### 44. GRASS - Millet

Millet grass can be harvested as a standing crop. When it is ripe enough to harvest, the grain shatters easily so a slow reel speed is desirable. The special 9/64" round hole shoe sieve (18518 KA) should be used in the lower position.

Millet grass is also often cut and windrowed so the hay will not be dead and can be better used for feed. A heavy growth is more difficult to thresh from the windrow due to the volume of hay that must be run through the machine and the difficulty experienced in getting the windrows dry enough to thresh.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-third to one-half. The same general setting will apply to all varieties of Millet harvested.

### 45. GRASS - Orchard

Orchard grass is usually cut as a standing crop. It is ready for harvesting as soon as the seed becomes straw colored. Bend a head into the palm of the hand and if some of the seed shatters it is ready to cut. The straw will be green and is often cut for a hay crop after the seed is removed. Use the special 3/32 x 1/2" slotted hole shoe sieve (18514 KA) in the lower position. A slow reel speed is desirable as the seed shatters easily.

Adjustment: Open the chaffer one-half and the adjustable shoe sieve one-fourth. The wind regulator should be almost closed.

### 46. GRASS - Red Top

Red Top grass is usually harvested as a standing crop. The seed shatters easily when ripe, so a slow reel speed should be used.

Adjustment: Close the wind regulator.

Use the Red Top grass attachment (ZDA-1180) for best results. This consists of one 22 x 22" wire mesh shoe screen (19116 K) to replace the adjustable shoe sieve, one 16 x 16" wire mesh chaffer screen (19120 K) to replace the chaffer, and one 12 x 12" wire mesh chaffer extension screen to replace the chaffer extension.

### 47. GRASS - Rye

The seed of Rye grass shatters readily when ripe. When harvesting this crop, a slow reel speed should be used.

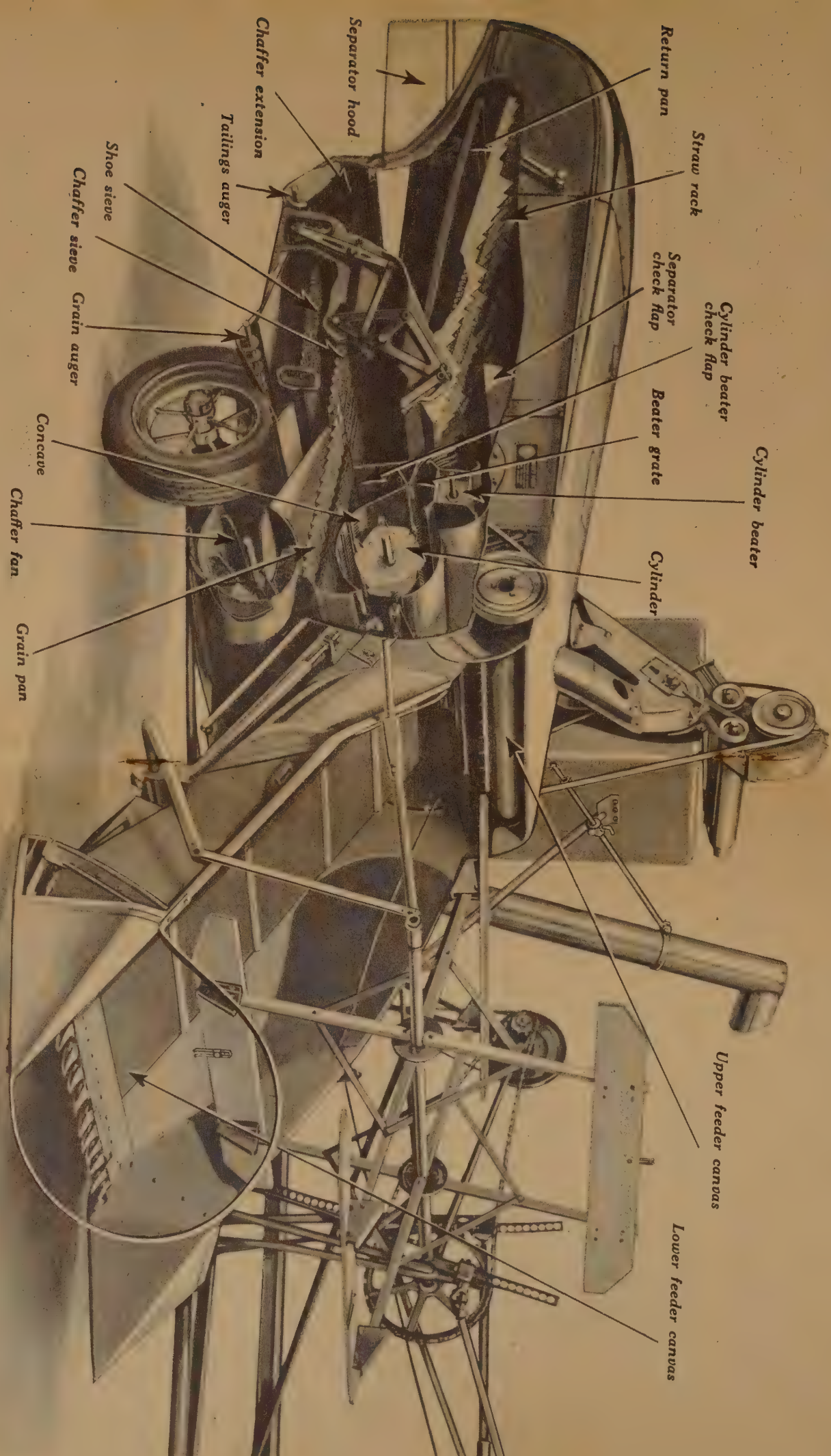
Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth to one-third, and adjust the wind regulator so that it is almost closed.

### 48. GRASS - Sudan

A slender annual grass often cultivated for hay in semi-arid regions, Sudan grass is usually harvested as a standing crop.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-third, and the wind regulator one-third to one-half.





Cutaway view showing arrangement of units inside the machine.



## HARVESTING INFORMATION - Continued

## 49. GRASS - Timothy

Timothy is harvested as a standing crop as soon as a majority of the seed is ripe, but it should not be left too long since the seed shatters easily. The stalk and leaves will still be green when the seed is ripe so the feeder must be kept as high as possible. High cutting of the crop will also minimize the amount of weed seed threshed with the Timothy. Use the slowest cylinder speed consistent with clean threshing and as wide a clearance as possible between the cylinder and concave in order not to hull the seed, yet close enough to remove the seeds from the pods. Since the heads do not all ripen evenly, the machine should be set to handle the ripe seed and tail over the green heads with chaff as green seed might heat and spoil good seed. Use the special 1/12" round hole shoe sieve (17775 KA) in the lower position.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth to one-third.

A clover and timothy attachment (ZDA 1162) is available. This attachment consists of a 5/32 x 3/4" slotted hole concave grate (17140 K) and the 1/12" round hole shoe sieve (17775 K).

## 50. LESPEDEZA - Korean (Japan Clover) (Annual Lespedeza) (Also Kobe, Common, and Tennessee 76)

Lespedeza is usually harvested as a standing crop but may be picked up from a windrow. The seed should be mature and the hulls brown when ready to harvest. One or two frosts may be necessary to ripen the seed thoroughly. The seed may be left in the hull when threshed since the weed seed can be more easily separated from the unhulled lespedeza when recleaned. The cylinder speed should usually be kept in the lower range. Use the special 5/32" round hole screen (18516 KA) in the lower position.

Adjustment: Open the chaffer one-half to two-thirds, the adjustable shoe sieve one-fourth to one third, and the wind regulator one-third.

For best results use the lespedeza attachment (ZDB-1486). This consists of: five six-prong guards (1497 K), one four-prong guard (550 033 R11), one three-prong guard (550 034 R11), four reel arm tie straps (M 34751), two reel bat hair pin clamps (38524 K), four reel bat adjusting clamps (38538 K), two reel bat hair pins (38523 K), four reel arms (27537 K), two reel bats (28645 K), and one 5/32" round hole shoe sieve (18516 KA).

## 51. LESPEDEZA - Sericea (Perennial Lespedeza)

This crop may be harvested when 85 to 90% of the hulls have turned brown. If cut and windrowed, the cutting should be done while the plants are damp to prevent loss due to shattering.

The same general adjustments and suggestions as recommended for Korean Lespedeza should be followed for Sericea Lespedeza. See Item 50.

## 52. LETTUCE

Lettuce is usually cut and bunched by hand. As the machine is drawn through the field small bunches are pitched onto the feeder. Since the stalks break up easily, it may materially aid the separation to cover the straw rack with the Mesh wire screen covers. See *Illust. 88*. Use the special 1/12" round hole shoe sieve (17775 KA) in the lower position.

Adjustment: Open the chaffer one-third and the adjustable shoe sieve one-fourth to one-third. The wind regulator should be almost closed.

MILLET - See GRASS - Millet

## 53. MUSTARD

Mustard is ready to harvest when the pods have turned a yellowish color. The special 1/12" round hole shoe sieve (17775 KA) can be used in the lower position.

Adjustment: Open the chaffer one-third, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth or less.



## HARVESTING INFORMATION - Continued

### 54. OATS

Oats are usually harvested as a standing crop as soon as the seed is dry enough to "bin" without heating. Extremely weedy crops may have to be cut and windrowed in order to dry up the weeds so the seed will not get damp from the seed juice during the threshing process. Oats as a rule are more easily threshed than wheat. The same cylinder speed is usually employed but more clearance is given the cylinder and concave.

Adjustment: Open the chaffer two-thirds, the adjustable shoe sieve one-half, and the wind regulator one-half.

### 55. ONIONS

Onion seed stalks are topped by hand and dried before threshing.

Adjustment: Open the chaffer one-third, the adjustable shoe sieve one-fourth, and the wind regulator one-fourth or less.

### 56. OKRA

Two methods are used in threshing this crop. The varieties which grow tall and coarse stalks are handled by hand picking. The pods, when dried, are threshed in a stationary manner. Dwarf varieties can be harvested as a standing crop. If it is difficult to obtain a clean sample, a special 3/8" round hole shoe sieve (17783 KA) can be used.

Adjustment: Open the chaffer two-thirds, the adjustable shoe sieve one-half, and the wind regulator one-half to two-thirds.

### PEAS

Two general classes of peas are harvested; field peas (sometimes known as "cow" peas or Canadian Field Peas), and garden varieties also known as "Canning" and "contract" peas. There are too many varieties in each class to give each special mention. From the threshing standpoint, Field peas can be divided into two groups. In one group, representative of which are the New Era and Whipporwill varieties, the mature seed shrinks considerably more than the seed coat. The very thin, brittle seed coat breaks easily. To minimize the damage done in threshing, the slowest possible cylinder speed is used that will permit clean threshing. Maintain a steady feed into the machine as the vines help cushion the peas and reduce crackage.

Seed of the other group, though also easily split, is not so fragile since the seed coat shrinks with the seed. Canadian Beauty and Marrowfat are examples of this group. Peas in both groups are harvested both as standing crops and from the windrow. The seed of garden varieties of peas is usually quite wrinkled due to the sugar content permitting considerable shrinkage of the mature seed. The seed coat shrinks with the seed, however, so that the crackage is not such a problem if threshed when in good harvesting condition.

Peas of any variety which have been let lie in the windrow or stand in the field for a considerable time after they are dry enough to thresh will crack more easily than if threshed as soon as sufficiently dry. The Handy Reference Chart on page 79 shows the general setting for the common varieties of peas. Using a special 7/16" round hole shoe sieve (17785 KA) in the lower position will often obtain a cleaner sample and at the same time reduce crackage by permitting a wider opening of the adjustable shoe sieve.

Adjustment: For all peas, open the chaffer two-thirds and the adjustable shoe sieve one-fourth to one-half depending on the size of the seed. Do not close this sieve more than necessary as it will cause too many shelled peas to be carried over into the tailings and increase crackage. The wind regulator can be two-thirds to full open.

When harvesting Field peas the use of the supplemental notched cylinder bars (19275 K) will often be helpful. See Illust. 85.

The pea and vetch attachment (ZDA-1188) should be used if the crop is sufficiently large. This consists of: one cylinder beater end shield left (19281 K), one cylinder beater end shield upper right (19289 K), one cylinder beater end shield lower right (19291 K), and one cylinder beater with blade extension (18827 K).

## HARVESTING INFORMATION - Continued

- 57. PEAS - Austrian
- 58. PEAS - Garden
- 59. PEAS - New Era
- 60. PEAS - Whipporwill
- 61. PEAS - Field

Read instructions covered under general heading "Peas" shown on page 85.

## 62. PARSNIP

In the parsnip two seeds are formed flat together in the head. When they begin to separate, the seed is ripe and should be harvested before the seed shatters. In many places the cutting is done by hand since the seed is not all ripe at one time, and by hand cutting and bunching, more mature seed can be obtained per acre. When hand cut and bunched, the machine is drawn through the field and small bunches are fed in by hand.

Adjustment: Open the chaffer one-third and the adjustable shoe sieve one-fourth to one-third. Allow little opening on the wind regulator.

## 63. RADISH

With radish and seed stalks may be harvested standing or cut and picked up with the windrow pickup attachment. The seed is very difficult to thresh. Use the special 5/32" round hole shoe sieve (18516 KA) in the lower position. If the crop is sufficiently large, it may be best to use the crimson clover attachment (ZDB-1153). This consists of: two rear concave bars (18683 K), one adjustable shoe sieve (18547 K), six straw rack rear section screens (18832 K), six straw rack front section screens (18833 K), and one 5/32 x 3/4" slotted hole concave grate (17140 K).

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth, and the wind regulator one-third to one-half.

## 64. RICE

Rice is usually tough threshing and hard to knock out of the head. It should be threshed as soon as possible after it is ripe as rice is liable to sun crack if left in the field too long. For this crop a high cylinder speed and close concave setting is usually required.

Adjustment: Open the chaffer one-half to two-thirds, the adjustable shoe sieve one-fourth to one-third, and the wind regulator one-half to two-thirds.

## 65. RYE

For Rye the machine should be used as regularly equipped. Tough rye may require a close cylinder and concave setting but the regular speed will be sufficient. Being smaller than wheat, rye will take a closer sieve setting. Also, less wind will be required.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-fourth to one-third, and the wind regulator one-half to two-thirds.

## SORGHUMS

There are really three types of sorghums, the grass sorghums, principal crop of this type being Sudan grass covered under GRASSES, Item 48; the Sweet Sorghums or Sorgos, commonly known as Molasses Cane, and the Grain Sorghums; Kafir, Milo, Feterita, and Durra. Other popular Sorghums but having fewer varieties are Hegari, Darso, Schrock, Freed, Fargo, Bishop, Shally, and many others. Some of the grain sorghums grow tall and must be cut with a corn binder, shocked to dry, then headed and threshed as a stationary job. Some grow to a medium weight and by raising the Harvester-Thresher cutter bar as high as possible, the crop can be harvested standing if it is a variety which does not "lodge" easily. Varieties which tend to "lodge" easily must be handled like the taller sorghums.

WHITE AND DOUBLE DWARF YELLOW: Many hybrids have been developed from crossing dwarf milo and kafir which are good combining sorghums. Wheatland is one of the best combine grain sorghums to date, averaging 32" in height and producing two to five stalks with fairly open, easily threshed heads. There are so many grain sorghums, and many varieties with different characteristics when grown in different localities that coverage here is not practical.

(Continued on next page)

## HARVESTING INFORMATION - Continued

### SORGHUMS - Continued

In general, set the concave clearance just close enough to thresh out the seed without excess crackage. This will vary from 1/4" to 3/4". The cylinder speed will also vary from 950 R.P.M. for the easily threshed open head varieties to 1700 R.P.M. for some of the compact headed varieties. Try the slow speed first and gradually increase as found necessary. Do not use a higher speed than necessary since one of the chief problems in threshing grain sorghums is to keep to a minimum the "pomace" (ground stalk) going into the threshed grain. Too much "pomace" causes excess moisture in the grain and may cause it to heat and spoil.

Dwarf varieties of many types have been developed especially for harvesting with the combine. This is true of the dwarf varieties of Milo, such as Dwarf Yellow and Sooner Milo.

Adjustment: Run the chaffer extension a little above level and almost closed. Open the chaffer one-half, the adjustable shoe sieve one-third, and the wind regulator one-third to one-half depending on the weight and size of the seed.

Screens are available to cover the front part of the straw rack if desired. See *Illust. 88*. Use the special 7/32" round hole shoe sieve (19116 KA) in the lower position. Use the special feed conveyor canvas (28803 K) to replace the regular canvas.

Varieties of Grain Sorghum with "curved necks", head turned down and commonly called "goose necks", often make it necessary to convert to a six-bat reel. The parts to convert regular 4-bat reel to 6-bat reel (38778 K) consists of: four reel arm tie straps (M 34751), two reel bat hair pin clamps (38524 K), four reel bat adjusting clamp (38538 K), two reel bat hair pins (38523 K), four reel arms (27537 K), and two reel bats (28645 K). Some operators cover the reel with fine mesh wire so the reel bats do not catch the heads and throw them out of the feeder.

For threshing the shocked sorghums the grain sorghum heading attachment (ZDA-1187) should be used. This consists of: one knife head guide (1917 K), one knife guide (19325 K), one cutter bar (19328 K), one feed conveyor canvas shield (19329 K), one knife (19333 K), and one knife back extension (19334 K).

66. KAFIR - Blackhull, Red, Pink, White, Sunrise, Dwarf Blackhull, Reed  
67. MILO - Dwarf Yellow, Sooner, Standard Yellow, White, Double Dwarf, Yellow, Etc.

68. FETERITA - Standard, Spur, Dwarf

69. HEGARI - (Also know as Higeear, Higeary, Higrain Wheat).

70. DARSO - (Also know as Mizo)

71. LURRA - White, Brown, Gyp Corn, Egyptian Corn.

72. SCHROCK - (A Kaffir and Sorgo Hybrid) (Also know as Sagrain)

73. HYBRIDS - Wheatland, Beaver, Bishop, Fargo, Freed, Grohomo, Kalo

74. SORGO - Sumac, Black Amber, Orange, Honey, Red Amber, Atlas, Etc.

### 75. SPELT

A race of wheat having loose kernels, triangular in shape. This crop is usually grown on poor soil and harvested standing. Use a slow reel speed.

Adjustment: Open the chaffer two-thirds to three-quarters, the adjustable shoe sieve one-half, and the wind regulator one-third to one-half.

### 76. SPINACH

Spinach is usually harvested as a standing crop. If thoroughly dry, the seed is not difficult to thresh out. Use the special 9/64" round hole shoe sieve (18518 KA) in the lower position.

Adjustment: Open the chaffer two-thirds, the adjustable shoe sieve one-half, and the wind regulator one-third.



## HARVESTING INFORMATION - Continued

### 77. SUNFLOWER

The sunflower has large yellow-rayed flower heads and bears seeds which serve as stock feed. The heads should be cut off the stalks by hand and piled in the field. The Harvester-Thresher is pulled through the field and the heads are then thrown onto the feeder by hand.

Adjustment: Open the chaffer two-thirds, the adjustable shoe sieve one-half, and the wind regulator one-half.

TIMOTHY - See GRASS - Timothy

### 78. TURNIP

Turnip seed may be harvested standing, or cut and then picked up with the windrow pickup attachment. Use the 5/32" round hole shoe sieve (18516 KA) in the lower position.

### 79. VETCH - Common

Being a cool weather plant, Common Vetch does not thrive in the central States. It is usually fall sown in mild climates, but a spring strain of the Common Vetch is sometimes grown. The crop can be harvested standing, or cut and then picked up with the windrow pickup attachment.

Common Vetch should be cut when the lower pods are brown and the upper pods are filled in order to obtain the maximum amount of seed, since the lower pods will open before all the uppers are brown. Use the special 3/8" round hole shoe sieve in place of the adjustable shoe sieve if desired.

Since sufficient seed will usually shatter during the harvesting, it should not be necessary to reseed the field.

Adjustment: Open the chaffer one-half, the adjustable shoe sieve one-third, and the wind regulator one-half.

The pea and vetch attachment (ZDA-1188) should be used if the crop is sufficiently large. This consists of: one cylinder beater end shield left (19281 K), one cylinder beater end shield upper right (19289 K), one cylinder beater end shield lower right (19291 K), and one cylinder beater with blade extension (18827 K).

### VETCH - Hairy

Hairy vetch may be grown on poorer soil than its relative and is markedly drought resistant. Hence it produces seed in almost any part of the United States. It is usually sown with small grain to support the weak vines, which clamber from 4 to 10 feet in a tangled mass. Hairy vetch usually grows more rank than common vetch, but its seed is much smaller.

Use the same general instructions for harvesting and adjusting as for Common Vetch except that the openings in the chaffer, the adjustable shoe sieve, and the wind regulator should be less.

### 80. WHEAT

Wheat is the largest crop we have to thresh and no doubt the best known. However, it also offers more variations than any other. Some crops are clean, the growth is even, the straw is of medium height, and the grain full matured and dry. That is the ideal condition, but every variation is at some time encountered.

For ordinary crops, a cylinder speed of 1300 R.P.M. with a cylinder and concave clearance of 3/16" will thresh the grain all out of the heads. Under some conditions, wheat may be found so tough or so shriveled that a cylinder speed as high as 1700 R.P.M. may be required to knock the seed out of the head. However, dry, fully matured seed may be so easily cracked that a speed of 975 R.P.M. is all that is necessary. Use only a necessary amount of cylinder speed as excess speed will crack the wheat. If desired, use the 15/64" round hole shoe sieve (17781 KA).

Adjustment: Open the chaffer two-thirds, the adjustable shoe sieve one-third to one-half, and the wind regulator one-half.

(Continued on next page)

## HARVESTING INFORMATION - Continued

### WHEAT - Continued

If a large amount of unthreshed grains (white caps) are appearing, a higher cylinder speed should be used and a closer setting is required between the concave bars and the cylinder. Use the special 5/32 x 3/4" slotted hole shoe sieve (18512 KA) for removing "white caps" from wheat.

Read carefully the instructions on cylinder speeds and cylinder adjustments on page 30 through 34. Also read the instructions on cleaning adjustments from page 41 through 44.

### CARE OF BELTING

Rubber belts should be kept free from mineral oils (generally used for lubricating bearings). This oil softens rubber and causes it to wear readily, exposing the fabric.

### CARE OF THE HARVESTER - THRESHER

The life of the machine depends on how well it is taken care of. When the season's work is finished, the machine should be thoroughly cleaned and all grease and dust removed. If left on, it will hold moisture and will ruin the paint; the sieves and other metal parts will rust, causing serious damage. The machine should be housed in a dry place. Remove drive belts, clean well and give them a light application of vegetable castor oil; wrap them in burlap and store in a cool dry place. Leave doors at bottom of elevators open. Lubricate all bearings and sickle. The platform should be supported so that the tension is removed from the feeder balancing spring. Jack up machine in order to take the load off the tires.

No thresher should be allowed to stand out through the winter unprotected from the weather, any more than an automobile. A good shed is far cheaper and will return good interest upon the money invested.

Before the beginning of the harvest season, the machine should be carefully inspected and the broken or worn parts replaced. See that all bolts and nuts are tight; this will save time and expense.

The grain pan under the concave should be cleaned occasionally. It may be reached by removing the grain pan canvas front rod and lowering the canvas. **IMPORTANT!** This should be watched very closely when harvesting soy beans or green crops.

### A FEW DON'TS

DON'T start machine without seeing that all loose parts have been removed.

DON'T neglect lubrication at any time - lubricant is cheaper than parts.

DON'T use cheap oil. It is made to sell - not for service, and is the source of much trouble and expense.

DON'T use axle grease in the grease gun; it is made for wagons.

Finally: DON'T let your machine stand out in the weather, unprotected from year to year and expect it to be just as efficient as when new. It will give more than double service when properly housed and taken care of, which will more than compensate you for the cost of a suitable building to shelter it when not in operation. Housing the machine is worth while.

## SPECIAL EQUIPMENT

| Ordering Number | Equipment                                                                                                          | Reference           |
|-----------------|--------------------------------------------------------------------------------------------------------------------|---------------------|
| ZDA-1161        | Alfalfa Attachment. . . . .                                                                                        | Illust. 81          |
| ZDA-1653        | Auxiliary Reel Attachment . . . . .                                                                                | Instruction Manual* |
| ZDB-1483        | Bagging Attachment. . . . .                                                                                        | Pages 154-155       |
| ZDA-1164        | Clover Attachment (Hop, Ladino, Lappaceum, Bur, and White Clovers) . . . . .                                       | Illust. 81          |
| ZDA-1162        | Clover and Timothy Attachment (Alsike, Mammoth, Red, and Sweet Clovers) . . . . .                                  | Illust. 81          |
| 18427 K         | Concave Grate (Blank) . . . . .                                                                                    | Illust. 78          |
| 17141 K         | Concave Grate (5/16 x 1-1/4" Slotted Holes) . . . . .                                                              | Illust. 82          |
| 17142 K         | Concave Grate (3/8 x 1-1/4" Slotted Holes) . . . . .                                                               | Illust. 82          |
| 21188 K         | Concave Grate for Edible Beans (5/8 x 1-1/4" Slotted Holes) . . . . .                                              | Illust. 82          |
| 21703 K         | Concave Grate Cover . . . . .                                                                                      | Illust. 79          |
| ZDB-1153        | Crimson Clover Attachment . . . . .                                                                                | Instruction Manual* |
| 20437 K         | Cylinder Bar Filler Sheets. . . . .                                                                                | Illust. 83          |
| 19340 K         | Cylinder Bar Rake . . . . .                                                                                        | Illust. 86          |
| 18329 K         | Cylinder and Countershaft pulley for intermediate cylinder speed (See "Cylinder Speed Chart" on page 31) . . . . . |                     |
| 19342 K         | Cylinder Beater End Shields . . . . .                                                                              | Illust. 84          |
| ZDB-1218        | Edible Bean Attachment with rigid type cylinder shaft sheave . . . . .                                             | Instruction Manual* |
| ZDA-1639        | Edible Bean Attachment with slip clutch type cylinder shaft sheave. . . . .                                        | Instruction Manual* |
| ZDA-1488        | Engine Attachment . . . . .                                                                                        | Instruction Manual* |
| 28803 K         | Feed Conveyor Canvas for Grain Sorghums . . . . .                                                                  | Illust. 95          |
| ZDA-1151        | Flax Attachment . . . . .                                                                                          | Instruction Manual* |
| 28200 K         | Grain and Tailings Elevator Steel Chain Flights . . . . .                                                          | Page 9              |
| .....           | Grain Lifters (13680 KA) (Five required) . . . . .                                                                 | Illust. 77          |
| ZDA-1187        | Grain Sorghum Heading Attachment. . . . .                                                                          | Instruction Manual* |
| ZDB-1506        | Grain Tank Attachment for Engine Drive Machines. . . . .                                                           | Pages 151-153       |
| ZDC-1493        | Grain Tank Attachment for Power Drive Machines. . . . .                                                            | Pages 151-153       |
| ZDA-1163        | Grass Attachment (Bermuda, Blue, and Carpet Grass). . . . .                                                        | Illust. 81          |
| 22544 KA        | Heavy "A" Frame Angle . . . . .                                                                                    | Illust. 75          |
| 48283 K         | Heavy Reel Bats . . . . .                                                                                          | Illust. 92          |
| ZDB-1486        | Lespedeza Attachment. . . . .                                                                                      | Instruction Manual* |

(Continued on next page.)

\* - Instructions for Attaching, including illustrations and Parts List, are furnished with the Attachment.



## SPECIAL EQUIPMENT - Continued

| Ordering Number | Equipment                                                                                              | Reference            |
|-----------------|--------------------------------------------------------------------------------------------------------|----------------------|
| .....           | Mesh Wire Screen Covers for Straw Rack. . .                                                            | Illust. 88           |
| ZDA-1443        | Mud Deflector Attachment. . . . .                                                                      | Instruction Manual*  |
| 38778 K         | Parts to convert regular 4-Bat Reel to 6-Bat Reel. . . . .                                             | Illust. 90           |
| 48497 K         | Parts to change from Ground Drive Reel to Power Drive Reel. . . . .                                    | Use Illusts. 27 & 28 |
| 48496 K         | Parts to change from Power Drive Reel to Ground Drive Reel. . . . .                                    | Use Illusts. 30 & 31 |
| ZDA-1188        | Pea and Vetch Attachment. . . . .                                                                      | Instruction Manual*  |
| ZDA-1484        | Platform Hydraulic Lift for Farmall "H" Tractor equipped with Hydraulic "Lift-All" Attachment. . . . . | Instruction Manual*  |
| ZDA-1485        | Platform Hydraulic Lift for Farmall "M" Tractor equipped with Hydraulic "Lift-All" Attachment. . . . . | Instruction Manual*  |
| ZDA-1159        | Raised Axle Attachment for machines equipped with Power Drive Reel. . . . .                            | Instruction Manual*  |
| ZDA-1492        | Raised Axle Attachment for machines equipped with Ground Drive Reel. . . . .                           | Instruction Manual*  |
| ZDA-1181        | Red Top Grass Attachment. . . . .                                                                      | See Item 46 Page 74  |
| 38916 K         | Reel Drive Slip Clutch and Special Reel Shaft for machines with Power Drive Reels only. . . . .        | Instruction Manual*  |
| 1786 K          | Reel Drive Countershaft Sprocket (8-teeth). . . . .                                                    | See Chart Page 21    |
| 1795 K          | Reel Drive Axle Sprocket (17-teeth). . . . .                                                           | See Chart Page 21    |
| 48281 K         | Reel End Guards for 4-Bat Reel. . . . .                                                                | Illust. 93           |
| 48280 K         | Reel End Guards for 6-Bat Reel. . . . .                                                                | Illust. 94           |
| ZDC-1185        | Rotary Screen Attachment (ScourKleen) for machines with Bagging Attachment. . . . .                    | Instruction Manual*  |
| ZDA-1461        | Rotary Screen Attachment (ScourKleen) for machines with Grain Tank Attachment). . . . .                | Instruction Manual*  |
| 48277 K         | Rubber Reel Bat Extension for 4-Bat Reel. . . . .                                                      | Illust. 91           |
| 48278 K         | Rubber Reel Bat Extension for 6-Bat Reel. . . . .                                                      | Illust. 91           |
| 49540 K         | Sickle with Under-Serrated Sections. . . . .                                                           | Illust. 76           |
| ZDA-1468        | Special parts for Harvesting Soy Beans when grown with corn. . . . .                                   | Instruction Manual*  |
| .....           | Special Shoe Bottom Screens. . . . .                                                                   | Illust. 80           |
| .....           | Special Sieves. . . . .                                                                                | Pages 47-50          |
| 16316 K         | Straw Rack Grain Deflector. . . . .                                                                    | Item 26, Page 129    |
| ZDA-1464        | Straw Spreader Attachment. . . . .                                                                     | Instruction Manual*  |
| 19274 K         | Supplemental Angle Cylinder Bars (Smooth). . . . .                                                     | Illust. 87           |
| 19275 K         | Supplemental Notched Cylinder Bars. . . . .                                                            | Illust. 85           |
| ZDA-1656        | Supplemental Outside Divider. . . . .                                                                  | Illust. 89           |
| ZDA-1487        | Windrow Pickup Attachment. . . . .                                                                     | Instruction Manual*  |

(Continued on page 92.)

\* - Instructions for Attaching, including illustrations and Parts List, are furnished with the Attachment.

## SPECIAL EQUIPMENT - Continued

| Ordering Number                                   | Tractor                                              |
|---------------------------------------------------|------------------------------------------------------|
| POWER DRIVE HITCHES<br>(For Power Drive Machines) |                                                      |
| ZDA-1465*                                         | Standardized Tractors having 1-3/8" spline.          |
| ZDA-1571*                                         | Standardized Tractors having 1-1/8" spline.          |
| ZDA-1572*                                         | Standardized Tractors having 1-3/4" spline.          |
| TRACTOR HITCHES<br>(For Engine Drive Machines)    |                                                      |
| ZDA-1495*                                         | IHC Farmall "A" Tractor.                             |
| ZDA-1496*                                         | IHC Farmall "B" Tractor.                             |
| ZDA-1497*                                         | IHC F-12 and F-14 Tractors.                          |
| ZDA-1498*                                         | IHC Regular and F-20 Tractors.                       |
| ZDA-1498*                                         | IHC F-30 Tractor.                                    |
| ZDA-1500*                                         | IHC Farmall "H" Tractor.                             |
| ZDA-1500*                                         | IHC Farmall "M" Tractor.                             |
| ZDA-1502*                                         | IHC Fairway 12, I-12, O-12, W-12, and W-14 Tractors. |
| ZDA-1503*                                         | IHC O-14 Tractor.                                    |
| ZDA-1504*                                         | IHC 10-20 Tractor.                                   |
| ZDA-1504*                                         | IHC W-30 Tractor.                                    |
| ZDA-1504*                                         | IHC 15-30 and W-40 Tractors.                         |
| ZDA-1507*                                         | IHC T-6 and TD-6 TracTractors.                       |
| ZDA-1508*                                         | IHC T-20 TracTractor.                                |
| ZDA-1509*                                         | Allis-Chalmers "B" Tractor.                          |
| ZDA-1533                                          | Allis-Chalmers "C" Tractor.                          |
| ZDA-1510*                                         | Allis-Chalmers "UC" Tractor.                         |
| ZDA-1511*                                         | Allis-Chalmers "WC" Tractor.                         |
| ZDA-1512                                          | Caterpillar D-2 Tractor.                             |
| ZDA-1513*                                         | Caterpillar No. 22 Tractor.                          |
| ZDA-1514*                                         | J.I. Case "CC" Tractor.                              |
| ZDA-1515*                                         | J.I. Case "DC" Tractor.                              |
| ZDA-1516*                                         | J.I. Case "R" Tractor.                               |
| ZDA-1517*                                         | J.I. Case "RC" and "C" Tractors.                     |
| ZDA-1518*                                         | J.I. Case "VC" Tractor (1-3/8" spline).              |
| ZDA-1518*                                         | J.I. Case "VC" Tractor (1-1/8" spline).              |
| ZDA-1519                                          | Cletrac General "GG" Tractor.                        |
| ZDA-1520*                                         | John Deere "A" and "B" Tractors.                     |
| ZDA-1521*                                         | John Deere "AR" Tractor.                             |
| ZDA-1522*                                         | John Deere "D" Tractor.                              |
| ZDA-1523*                                         | John Deere "G" Tractor.                              |
| ZDA-1524*                                         | John Deere "H" Tractor.                              |
| ZDA-1525*                                         | John Deere 4-Wheel General Purpose Tractor.          |
| ZDA-1526*                                         | Ford Tractor.                                        |
| ZDA-1527*                                         | Massey-Harris No. 25 Tractor.                        |
| ZDA-1528*                                         | Massey-Harris "Challenger" Tractor.                  |
| ZDA-1529*                                         | Minneapolis-Moline Model "J" Tractor.                |
| ZDA-1530*                                         | Minneapolis-Moline Model "R" Tractor.                |
| ZDA-1531*                                         | Minneapolis-Moline Model "RT" Tractor.               |
| ZDA-1532*                                         | Oliver No. 70 Tractor.                               |

\* - Instructions for Attaching, including illustrations and Parts List, are furnished with the Attachment.

*Play Safe . . . . .*

INSIST ON  PARTS

**WHEN** you bought your International Harvester tractor or machine, you made a good choice—you have a machine that deserves good care and good service. When wear and tear make new parts necessary, remember why you bought an International Harvester *Quality* Product. You bought quality to be sure of performance. Don't handicap your equipment by careless selection of replacement parts.

**PLAY SAFE!** Go to the International Harvester dealer for IH parts. The IH trademark is your guarantee of quality, your best assurance that your International Harvester equipment will continue to give you top-grade performance, no matter what you ask of it.



## PARTS LIST AND ILLUSTRATIONS

The following pages contain parts list and illustrations of "exploded" views of the various units disassembled so that parts wanted may be readily located. Reference numbers only are shown in the illustrations and, to avoid errors and delays, when ordering parts always use the regular "Part Number" shown with the "Ref. No." Do not use reference numbers when ordering parts.

Standard parts such as bolts, nuts, washers, etc., having no IHC part number, should be ordered by size.

Unnumbered parts in the illustrations are the same as corresponding parts shown with numbers.

Don't order parts from the illustrations only; refer to the list also.

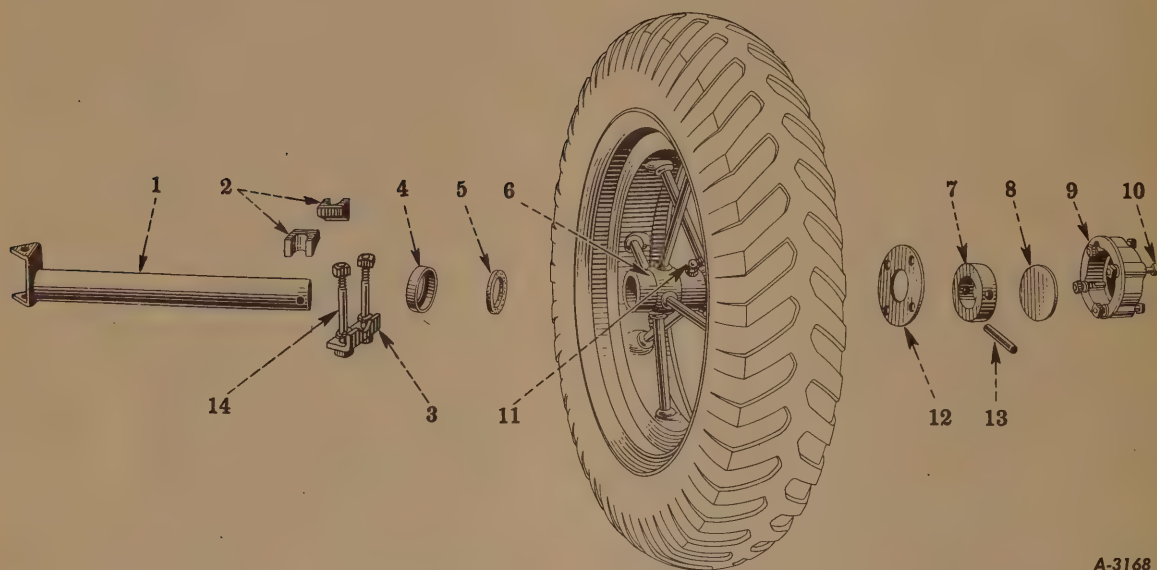
### INDEX TO UNITS

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Numerical Index to Part Numbers will be found on pages 161 to 164.



# **MAIN WHEEL AND AXLE** **(For Machines with Pneumatic Tire Wheels)**

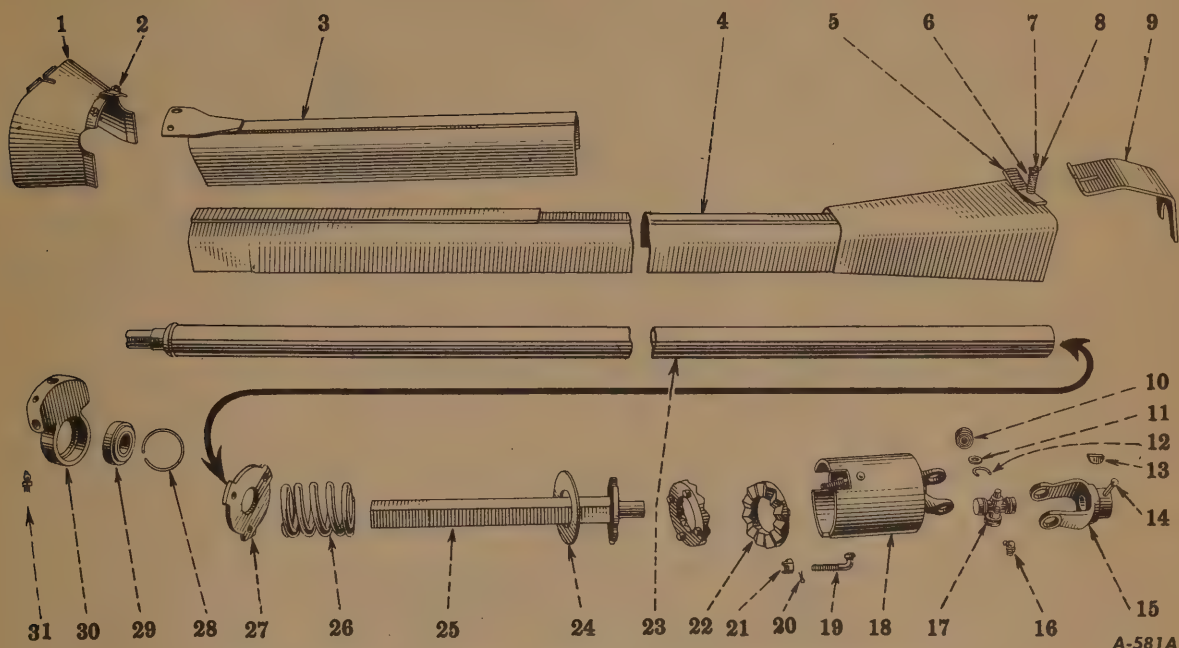


A-3168

| Ref. No. | Part Number | Description                                             |
|----------|-------------|---------------------------------------------------------|
| 1        | 18934 KA    | Axle, left and right.                                   |
| 2        | 1969 K      | Axle clamp block.                                       |
| 3        | 22356 K     | Axle clamp plate.                                       |
| 4        | { 16979 K   | Lubricate retainer (right wheel).                       |
|          | { 18661 K   | Lubricate retainer (left wheel).                        |
| 5        | { 16356 K   | Felt washer (right wheel).                              |
|          | { 18499 K   | Felt washer (left wheel).                               |
|          | { 18548 K   | Left main wheel (steel spokes) (uses 18550 K bushing).  |
| 6        | { 49646 K   | Left main wheel (disc type) (uses 49647 K bushing)      |
|          |             | (not illustrated).                                      |
|          | { 18549 K   | Right main wheel (steel spokes) (uses 18550 K bushing). |
|          | { 49645 K   | Right main wheel (disc type) (uses 49647 K bushing)     |
|          |             | (not illustrated).                                      |
| 7        | 1784 K      | Thrust collar.                                          |
| 8        | 16286 K     | Thrust washer, outer (14 ga.).                          |
| 9        | 1783 KA     | Hub cap.                                                |
| 10       | .....       | Machine bolt, 5/16 x 2-1/4" (hub cap bolt) (with nut).  |
| 11       | 109 353     | Lubrication fitting, 30° elbow.                         |
| 12       | 16287 K     | Thrust washer, inner.                                   |
| 13       | 121 622     | Thrust collar pin, 3/8 x 2-11/16".                      |
| 14       | .....       | Machine bolt, 7/16 x 4-1/8" (with nut).                 |



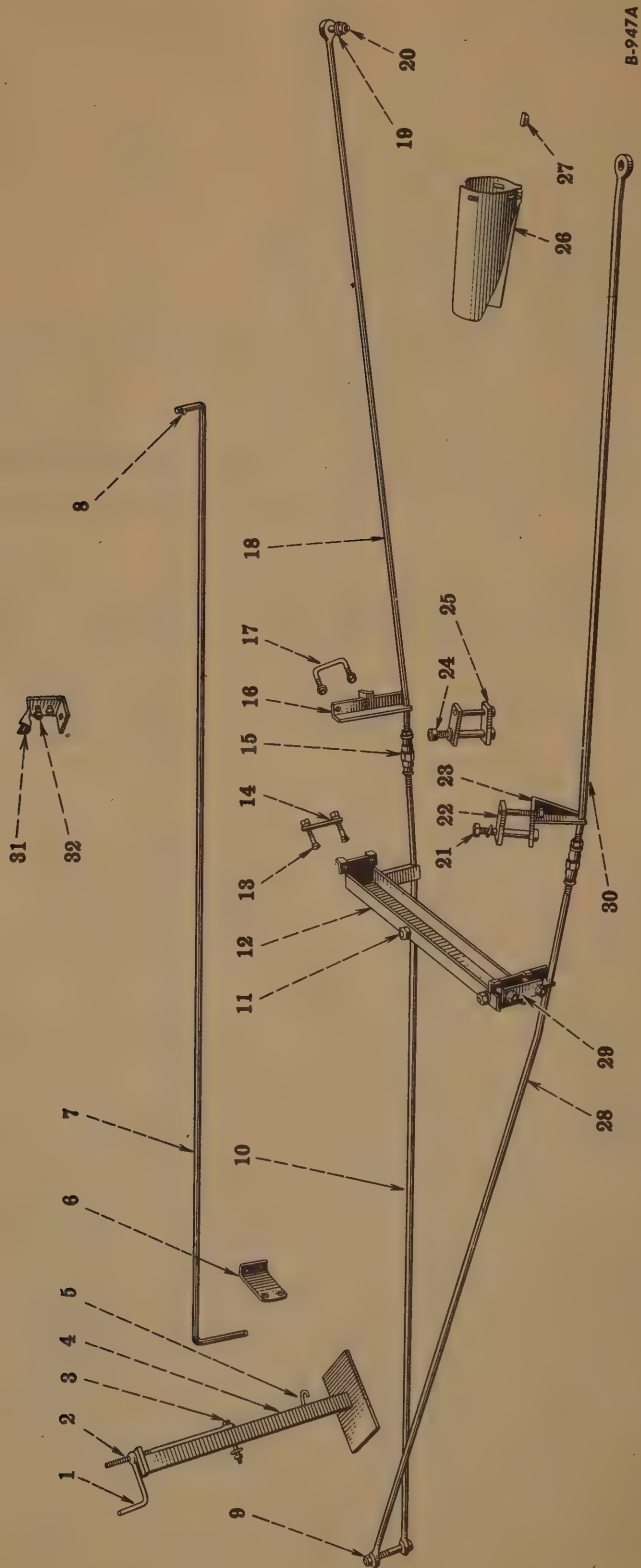
# SLIDING PROPELLER SHAFT AND SHIELDS (For Power Drive Machines)



A-581A

| Ref. No. | Part Number | Description                                      | Ref. No. | Part Number | Description                                                |
|----------|-------------|--------------------------------------------------|----------|-------------|------------------------------------------------------------|
| 1        | 38249 K     | Knuckle shield, front.                           | 17       | M 32990     | Knuckle center (less bearings) (with lubrication fitting). |
| 2        | .....       | Machine bolt, 3/8 x 7/8" (with nut).             | 18       | 38942 KA    | Ratchet holder and knuckle, cp. (with 551 068 R1 bushing). |
| 3        | 38247 K     | Shield, front.                                   | 19       | U 20764     | Bolt.                                                      |
| 4        | 38294 K     | Shield, rear.                                    | 20       | .....       | Cotter, 1/8 x 3/4".                                        |
| 5        | C 33463     | Latch.                                           | 21       | M 152 M     | Horned nut, 3/8".                                          |
| 6        | C 33464     | Spring.                                          | 22       | B 12170     | Ratchet.                                                   |
| 7        | 15 996 R1   | Machine bolt, 3/8 x 2-1/2" (drilled) (with nut). | 23       | 38293 K     | Shaft, complete.                                           |
| 8        | .....       | Cotter, 1/8 x 3/4".                              | 24       | U 22071     | Washer, 1-7/8 x 3-15/16" x 16 ga.                          |
| 9        | 38285 K     | Bracket, rear.                                   | 25       | U 20946     | Shaft.                                                     |
| 10       | M 32995     | Bearing, complete.                               | 26       | 19302 K     | Spring.                                                    |
| 11       | M 32994     | Washer.                                          | 27       | U 20770     | Tension plate.                                             |
| 12       | M 32991     | Snap ring.                                       | 28       | U 20551     | Snap ring.                                                 |
| 13       | 117 977     | Key, 5/16 x 1" (Woodruff "B").                   | 29       | 15073 K     | Bearing.                                                   |
| 14       | Q 1302      | Pin, 5/16 x 2-1/4" (drilled).                    | 30       | U 6069      | Box.                                                       |
| 15       | 38287 K     | Knuckle.                                         | 31       | 119 512     | Lubrication fitting, 1/8", straight.                       |
| 16       | 109 354     | Lubrication fitting, 1/8", 90° elbow.            |          |             |                                                            |

# ENGINE MOUNTING PARTS



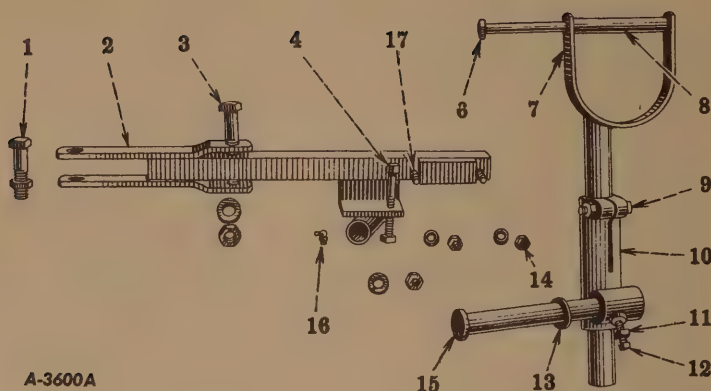
## ENGINE MOUNTING PARTS - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                                              | Ref. No. | Part Number | Description                                     |
|----------|-------------|--------------------------------------------------------------------------|----------|-------------|-------------------------------------------------|
| 1        | 24573 K     | Lifting jack crank handle.                                               | 16       | 49145 K     | Truss rod bracket right, complete.              |
| 2        | 24571 K     | Lifting jack bolt.                                                       | 17       | 18144 K     | "U" bolt.                                       |
| 3        | .....       | Machine bolt, 3/8 x 3-1/2" with nut and 13/32 x 1" x 16 ga. flat washer. | 18       | 48317 K     | Truss rod, rear, right.                         |
| 4        | 48940 K     | Lifting jack angle, complete.                                            | 19       | .....       | Washer, 15/32 x 1-1/4" x 11 ga.                 |
| 5        | 17260 K     | Lifting jack hook clamp bolt.                                            | 20       | .....       | Machine bolt, 7/16 x 2-5/8" (with nut).         |
| 6        | 48302 K     | Bracket.                                                                 | 21       | .....       | Machine bolt, 5/8 x 4-3/8" (with nut).          |
| 7        | 48490 K     | Rod.                                                                     | 22       | 48326 K     | Engine support rear plate.                      |
| 8        | .....       | Cotter, 5/32 x 1-1/2".                                                   | 23       | 48323 K     | Truss rod bracket, left, rear.                  |
| 9        | .....       | Machine bolt, 5/8 x 4-5/8" (with nut).                                   | 24       | .....       | Machine bolt, 5/8 x 4-1/2" (with nut).          |
| 10       | 48315 K     | Truss rod, front, right.                                                 | 25       | 48328 K     | Clamp plate.                                    |
| 11       | .....       | Machine bolt, 5/8 x 1-1/4" (with nut).                                   | 26       | 48300 K     | Universal coupling shield.                      |
| 12       | 48304 K     | Engine front support strut, complete.                                    | 27       | 117 977     | Woodruff key.                                   |
| 13       | .....       | Carriage bolt, 7/16 x 2-1/2" (with nut).                                 | 28       | 48303 K     | Truss rod, front, left.                         |
| 14       | 48321 K     | Clamp plate.                                                             | 29       | 48321 K     | Clamp plate.                                    |
| 15       | M 819       | Turnbuckle.                                                              | 30       | 48306 K     | Truss rod, rear, left.                          |
|          |             |                                                                          | 31       | 26934 KA    | Engine crank support.                           |
|          |             |                                                                          | 32       | .....       | Round slotted head bolt, 1/4 x 5/8" (with nut). |



# **"A" FRAME EXTENSION AND SUPPORT** (For Power Drive Machines)

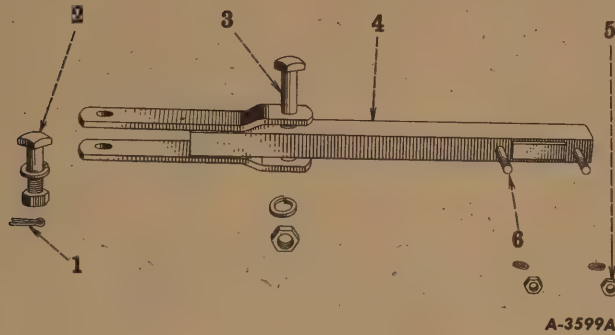


| Ref. No. | Part Number | Description                                      | Ref. No. | Part Number | Description                          |
|----------|-------------|--------------------------------------------------|----------|-------------|--------------------------------------|
| 1        | .....       | Machine bolt, 3/4 x 3-1/4" (drilled) (with nut). | 9        | .....       | Machine bolt, 7/16 x 2" (with nut).  |
| 2        | 38776 KB    | "A" frame extension, cp.                         | 10       | 2465 K      | Pivot.                               |
| 3        | 13 492 R11  | Machine bolt, 3/4 x 4" (with nut).               | 11       | .....       | Hex. nut, 7/16".                     |
| 4        | .....       | Machine bolt, 1/2 x 3-3/4" (with nut).           | 12       | .....       | Set screw, 7/16 x 1" (cup point).    |
| 6        | .....       | Machine bolt, 1/2 x 5-3/4" (with nut).           | 13       | .....       | Washer, 1-1/32 x 1-1/2" x 11 ga.     |
| 7        | { 38638 KA  | § Bearing support, cp.                           | 14       | .....       | Hex. nut, 7/16".                     |
|          | { 50251 KA  | ‡ Bearing support, cp.                           | 15       | 38281 K     | Pivot shaft.                         |
| 8        | U 20726     | Pivot tube, 3/4" O.D. x 4-15/32".                | 16       | 109 354     | Lubrication fitting, 1/8", 90 elbow. |
|          |             |                                                  | 17       | 13 559 R1   | Machine bolt, 7/16 x 5" (with nut).  |

§ Not for I.H.C. 10-20, 15-30, W-30, W-40 and WD-40 Tractors.

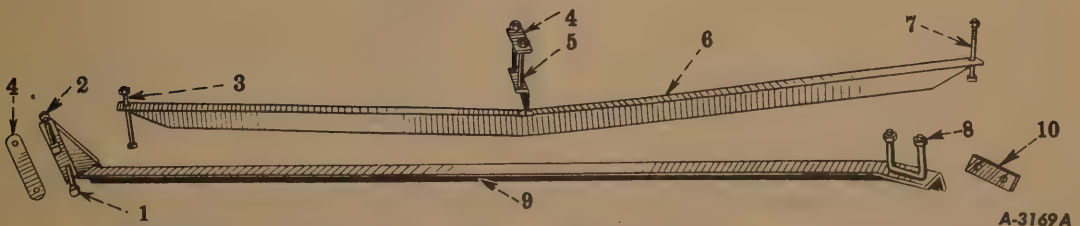
‡ For I.H.C. 10-20, 15-30, W-30, W-40 and WD-40 Tractors.

## "A" FRAME EXTENSION (For Engine Drive Machines)



| Ref. No. | Part Number | Description                                      |
|----------|-------------|--------------------------------------------------|
| 1        | .....       | Cotter, 1/8 x 1-1/4".                            |
| 2        | .....       | Machine bolt, 3/4 x 3-1/4" (drilled) (with nut). |
| 3        | 13 492 R11  | Machine bolt, 3/4 x 4" (with nut).               |
| 4        | 28704 KB    | "A" frame extension.                             |
| 5        | .....       | Hex. nut, 7/16".                                 |
| 6        | 13 559 R1   | Machine bolt, 7/16 x 5" (with nut).              |

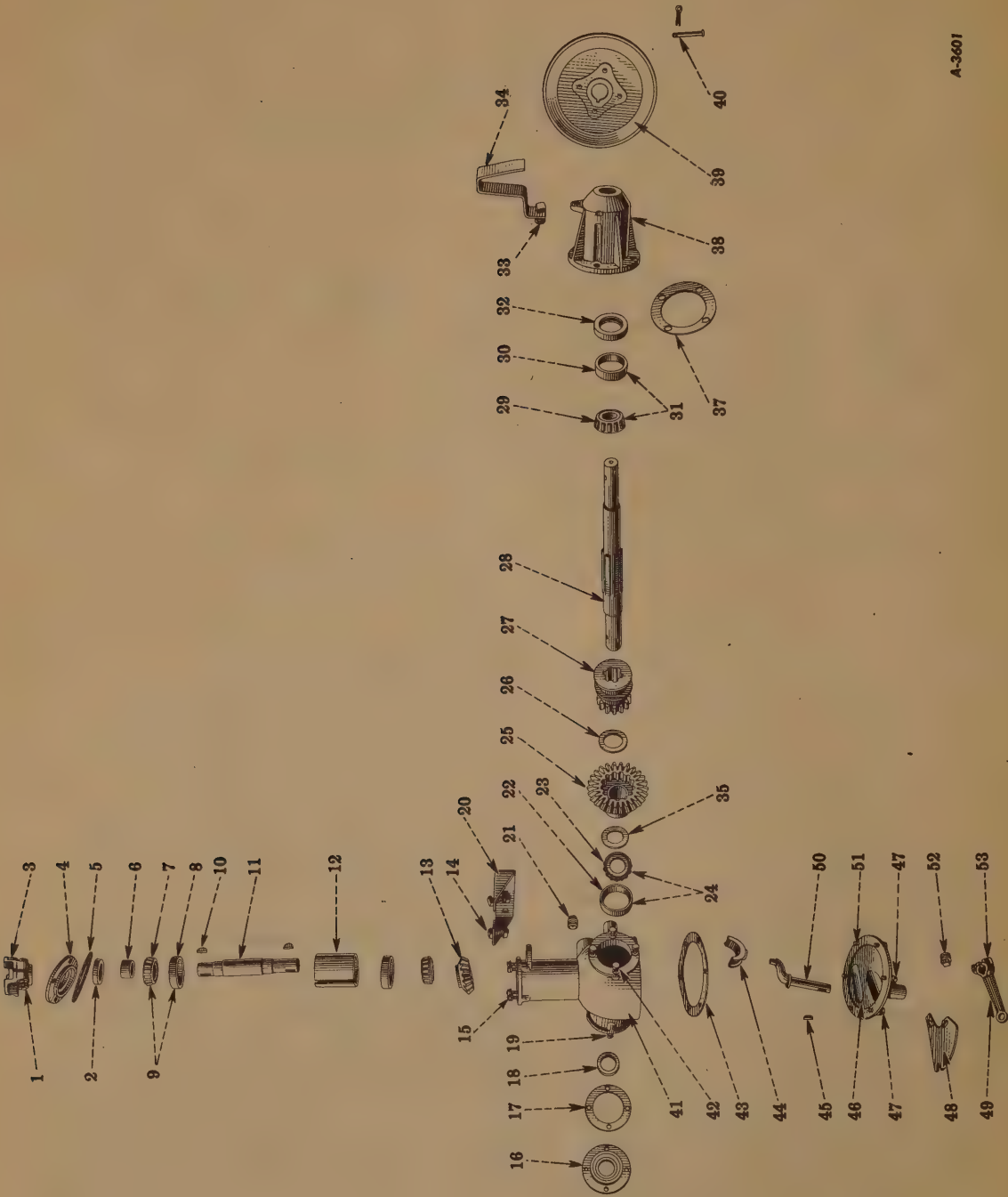
### MAIN AXLE TRUSS AND BRACE



| Ref. No. | Part Number | Description                                             | Ref. No. | Part Number | Description                                             |
|----------|-------------|---------------------------------------------------------|----------|-------------|---------------------------------------------------------|
| 1        | .....       | Cap screw, 7/16 x 4".                                   | 5        | .....       | Machine bolt, 7/16 x 4-3/8" (with nut).                 |
| 2        | .....       | Machine bolt, 7/16 x 4-3/4" (with nut).                 | 6        | 48125 K     | Axle truss, cp.                                         |
| 3        | .....       | Machine bolt, 7/16 x 4-5/8" (MD 1036 steel) (with nut). | 7        | .....       | Machine bolt, 7/16 x 4-5/8" (MD 1036 steel) (with nut). |
| 4        | 16209 K     | Clamp plate.                                            | 8        | .....       | Hex. nut, 7/16".                                        |
|          |             |                                                         | 9        | 48140 K     | Axle brace, cp.                                         |
|          |             |                                                         | 10       | 48153 K     | Clamp plate.                                            |

¶ - Not used on Bagger Machines.

TRANSMISSION GEAR CASE (For Grain Tank Machines)



A-3601

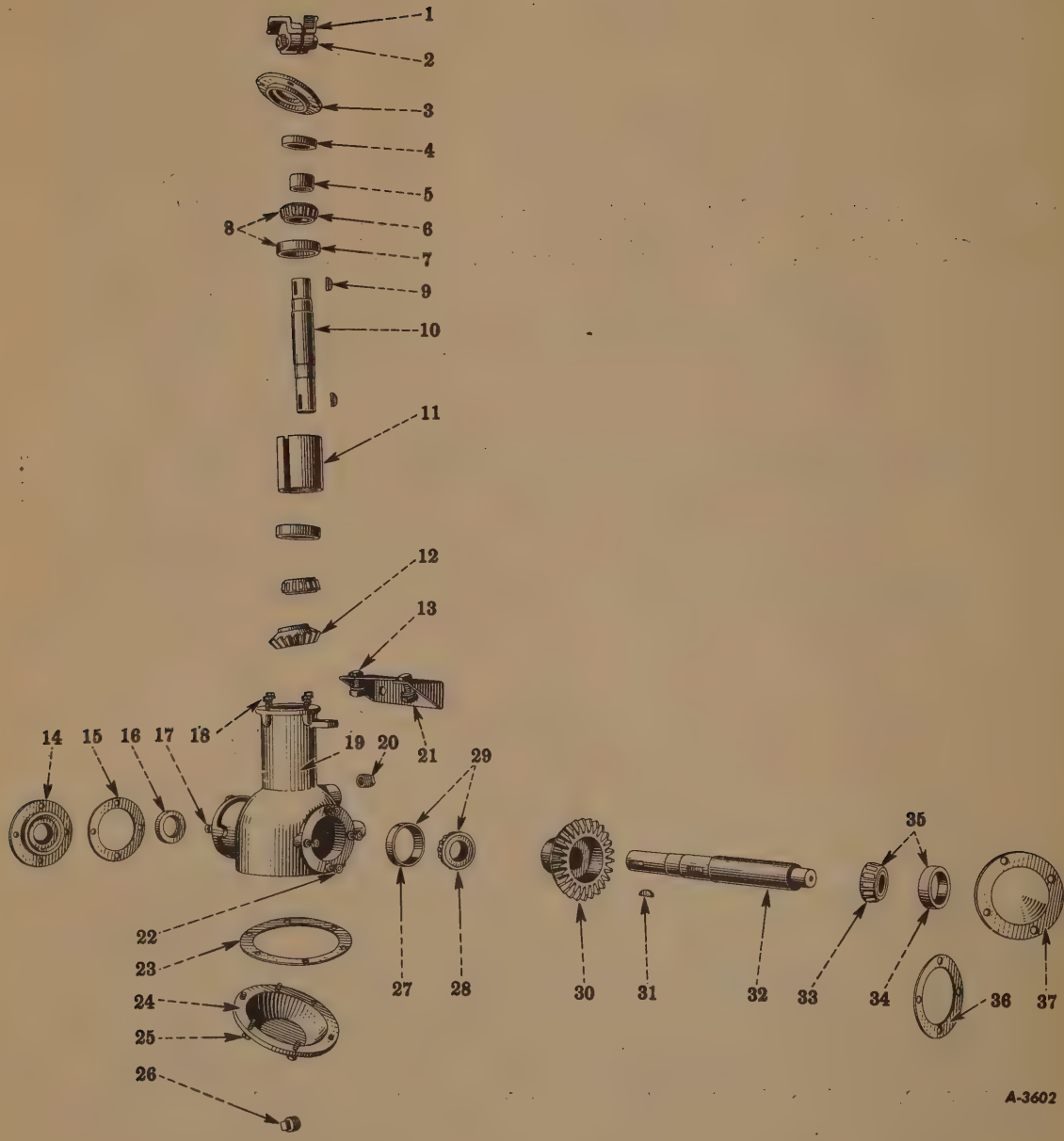


## TRANSMISSION GEAR CASE (For Grain Tank Machines) - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                                     | Ref. No. | Part Number | Description                          |
|----------|-------------|-----------------------------------------------------------------|----------|-------------|--------------------------------------|
| 1        | .....       | Machine bolt, 1/2 x 2-1/8" (with nut)                           | 25       | 16366 K     | Gear, 26 teeth.                      |
| 2        | 61103 D     | Oil seal.                                                       | 26       | 18520 K     | Bushing.                             |
| 3        | 2045 K      | Coupling.                                                       | 27       | 18337 K     | Gear, cp. with bushing.              |
| 4        | 1775 K      | Cap, right.                                                     | 28       | 16207 K     | Washer.                              |
| 5        | 17931 K     | Shim (.020" thick).                                             | 29       | 16364 K     | Pinion, 13 teeth.                    |
| 6        | 17932 K     | Shim (.007" thick).                                             | 30       | 18544 K     | Shaft, 1-3/8" rd. x 15-9/16".        |
| 7        | 17933 K     | Shim (.005" thick).                                             | 31       | 52531 V     | Cone.                                |
| 8        | 16187 K     | Sleeve.                                                         | 32       | 50216 V     | Cup.                                 |
| 9        | 19132 K     | Cone.                                                           | 33       | 52530 V     | Bearing, complete.                   |
| 10       | 54630 H     | Cup.                                                            | 34       | 10207 P     | Oil seal.                            |
| 11       | 19133 K     | Bearing, complete.                                              | 35       | .....       | Machine bolt, 5/16 x 1" (with nut).  |
| 12       | 103 907     | Key, 3/16 x 7/8" (Woodruff No. 11).                             | 36       | 18189 K     | Sheave guard.                        |
| 13       | 17942 K     | Shaft, 1-3/16" rd. x 8-1/32".                                   | 37       | 16208 K     | Thrust washer.                       |
| 14       | 18152 K     | Bearing spacer.                                                 | 38       | 16225 K     | Shim (.020" thick).                  |
| 15       | 16365 K     | Pinion, 17 teeth.                                               | 39       | 16226 K     | Shim (.007" thick).                  |
| 16       | .....       | Machine bolt, 7/16 x 1-1/8" (with nut).                         | 40       | 16227 K     | Shim (.005" thick).                  |
| 17       | .....       | Cap screw, 5/16 x 3/4".                                         | 41       | 1799 K      | Cap, rear.                           |
| 18       | 1798 KA     | Cap, front.                                                     | 42       | 18545 K     | Sheave.                              |
| 19       | 17931 K     | Shim (.020" thick).                                             | 43       | 1380 S      | Pin, 5/16 x 1-49/64".                |
| 20       | 17932 K     | Shim (.007" thick).                                             | 44       | 1802 K      | Gear case.                           |
| 21       | 17933 K     | Shim (.005" thick).                                             | 45       | .....       | Cap screw, 5/16 x 3/4".              |
| 22       | 18674 K     | Oil seal.                                                       | 46       | 16355 K     | Gasket.                              |
| 23       | .....       | Cap screw, 5/16 x 3/4" and two 11/32 x 1-1/2" x 16 ga. washers. | 47       | 1864 K      | Shoe.                                |
| 24       | 17723 K     | Support bracket.                                                | 48       | 106 751     | Key, 3/16 x 3/4" (Woodruff No. 9).   |
| 25       | 54630 H     | Pipe plug, 1/2".                                                | 49       | 1803 K      | Cover, left.                         |
| 26       | 19132 K     | Cup.                                                            | 50       | .....       | Cap screw, 5/16 x 1-1/8".            |
| 27       | 19133 K     | Cone.                                                           | 51       | 18209 K     | Flat washer, 11/32 x 11/16" x 16 ga. |
| 28       | .....       | Bearing, complete.                                              | 52       | 1863 K      | Shifter lock.                        |
| 29       | .....       | .....                                                           | 53       | 17709 K     | Shifter lever.                       |
| 30       | .....       | .....                                                           | 54       | .....       | Crank.                               |
| 31       | .....       | .....                                                           | 55       | .....       | Cap screw, 5/16 x 3/4".              |
| 32       | .....       | .....                                                           | 56       | 103 868     | Pipe plug, 1/2".                     |
| 33       | .....       | .....                                                           | 57       | .....       | Machine bolt, 3/8 x 1-3/8".          |

TRANSMISSION GEAR CASE (For Bagging Attachment Machines)



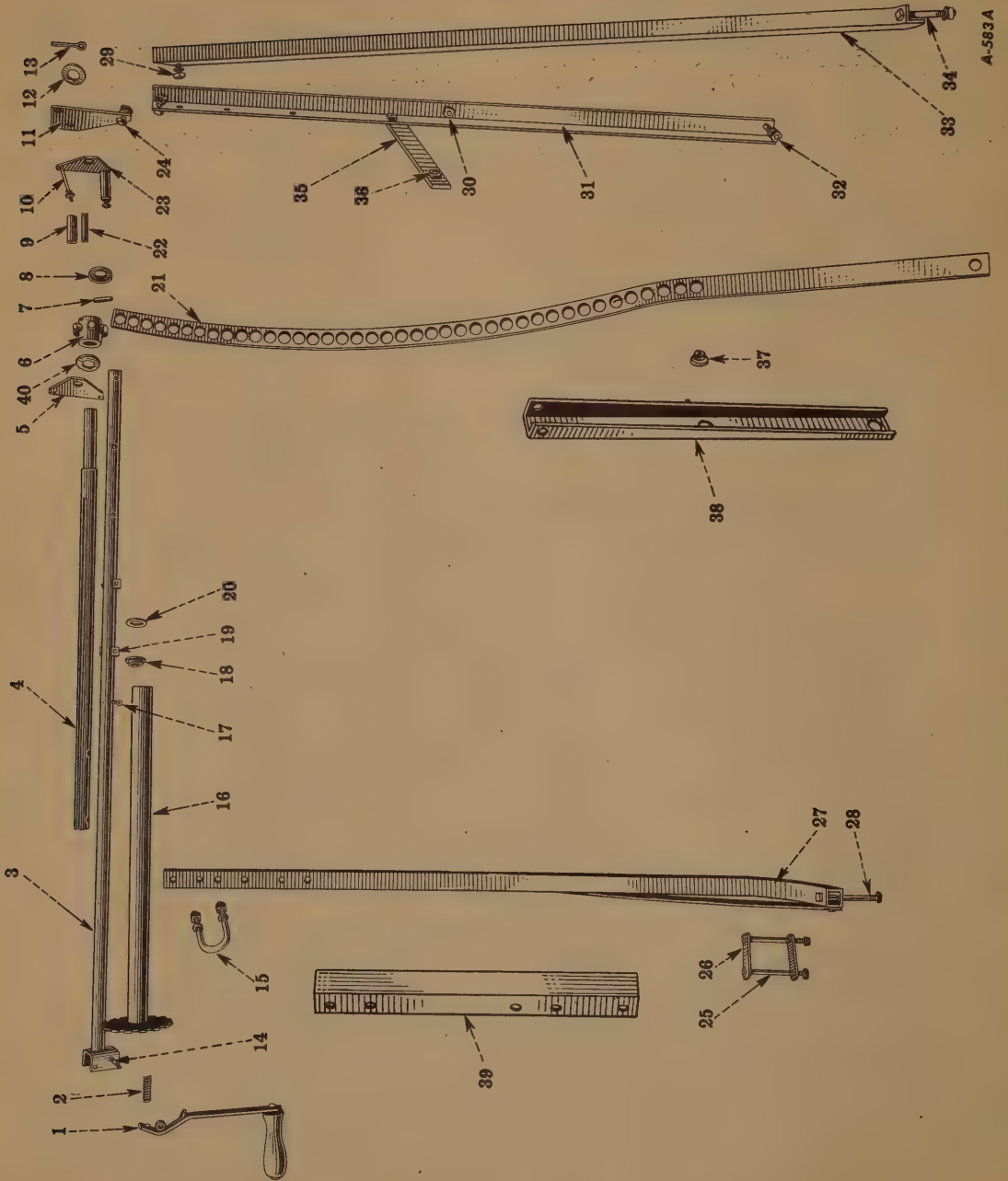
## TRANSMISSION GEAR CASE (For Bagging Attachment Machines) - Continued

*Index to Reference Numbers shown in illustration on opposite page.*

| Ref. No. | Part Number | Description                                                      |
|----------|-------------|------------------------------------------------------------------|
| 1        | 2045 K      | Coupling.                                                        |
| 2        | .....       | Machine bolt, 1/2 x 2-1/8" (with nut).                           |
| 3        | 1775 K      | Cap, right.                                                      |
| 4        | 61103 D     | Oil seal.                                                        |
| 5        | 16187 K     | Sleeve.                                                          |
| 6        | 19132 K     | Cone.                                                            |
| 7        | 54630 H     | Cup.                                                             |
| 8        | 19133 K     | Bearing, complete.                                               |
| 9        | 103 907     | Key, 3/16 x 7/8" (Woodruff No. 11).                              |
| 10       | 17942 K     | Shaft, 1-3/16" rd. x 8-1/32".                                    |
| 11       | 18152 K     | Bearing spacer.                                                  |
| 12       | 16365 K     | Pionion, 17 teeth.                                               |
| 13       | .....       | Machine bolt, 7/16 x 1-1/8" (with nut).                          |
| 14       | 1798 KA     | Cap, front.                                                      |
| 15       | { 17931 K   | Shim (.020" thick).                                              |
|          | { 17932 K   | Shim (.007" thick).                                              |
|          | { 17933 K   | Shim (.005" thick).                                              |
| 16       | 18674 K     | Oil seal.                                                        |
| 17       | .....       | Cap screw, 5/16 x 3/4" and two, 11/32 x 1-1/2" x 16 ga. washers. |
| 18       | .....       | Cap screw, 5/16 x 3/4".                                          |
| 19       | 1802 K      | Gear case.                                                       |
| 20       | .....       | Pipe plug, 1/2".                                                 |
| 21       | 17723 K     | Support bracket.                                                 |
| 22       | .....       | Cap screw, 5/16 x 3/4".                                          |
| 23       | 16355 K     | Gasket.                                                          |
| 24       | 1944 K      | Gear case cover.                                                 |
| 25       | .....       | Cap screw, 5/16 x 3/4".                                          |
| 26       | 103 868     | Pipe plug, 1/2".                                                 |
| 27       | 54630 H     | Cup.                                                             |
| 28       | 19132 K     | Cone.                                                            |
| 29       | 19133 K     | Bearing, complete.                                               |
| 30       | 18724 K     | Gear, 26 teeth.                                                  |
| 31       | 117 977     | Key, 5/16 x 1" (Woodruff "B").                                   |
| 32       | 18723 K     | Shaft, 1-1/4" rd. x 10-1/2".                                     |
| 33       | 52531 V     | Cone.                                                            |
| 34       | 50216 V     | Cup.                                                             |
| 35       | 52530 V     | Bearing, complete.                                               |
| 36       | { 16225 K   | Shim (.020" thick).                                              |
|          | { 16226 K   | Shim (.007" thick).                                              |
|          | { 16227 K   | Shim (.005" thick).                                              |
| 37       | 1943 K      | Cap, rear.                                                       |



PLATFORM MANUAL LIFT PARTS



## PLATFORM MANUAL LIFT PARTS - Continued

Index to Reference Numbers shown in illustration on opposite page.

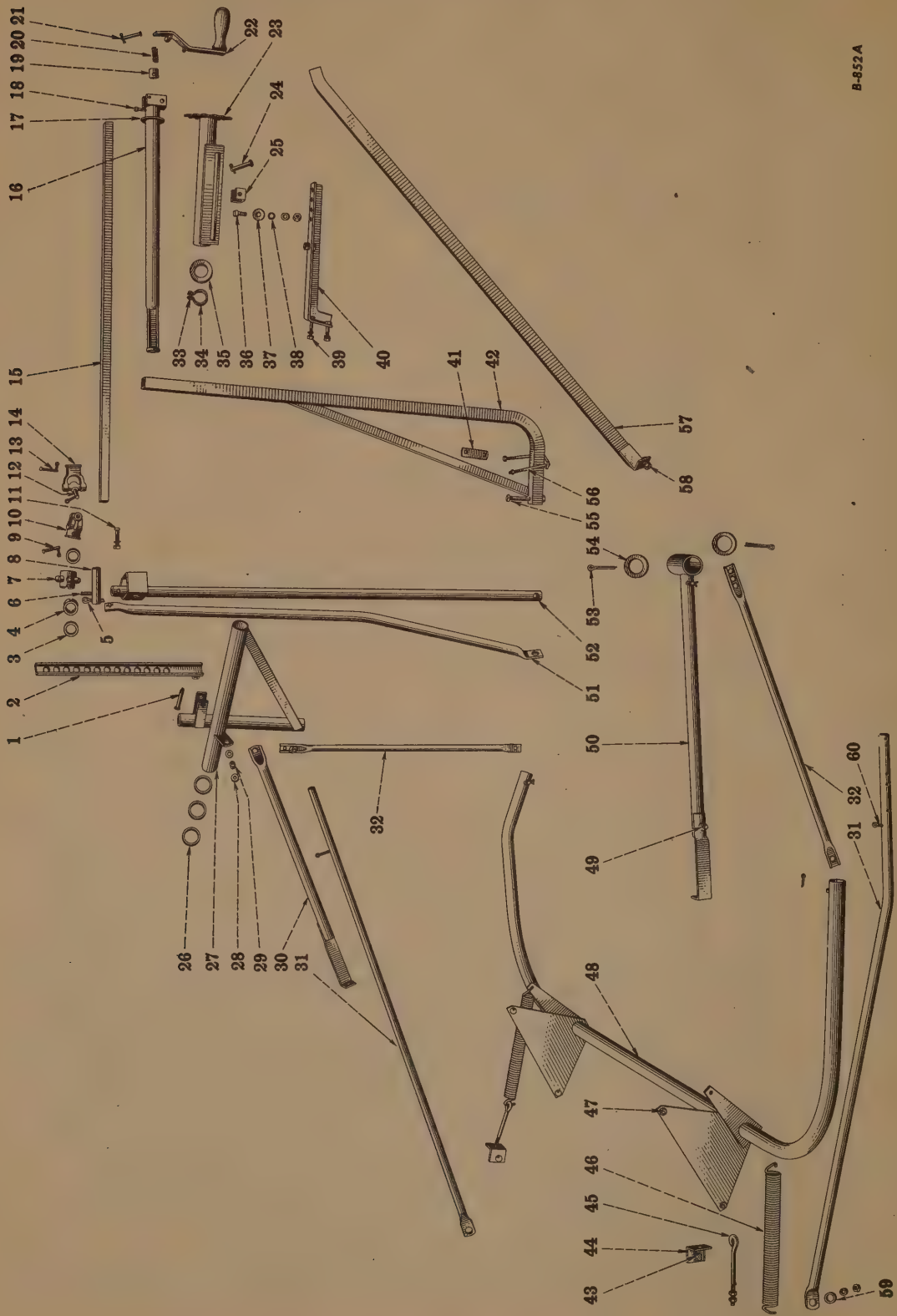
| Ref. No. | Part Number | Description                              | Ref. No. | Part Number | Description                          |
|----------|-------------|------------------------------------------|----------|-------------|--------------------------------------|
| 1        | 551 280 R91 | Adjusting crank, complete.               | 26       | 18208 K     | Tie plate.                           |
| 2        | No. 9 DS    | Spring.                                  | 27       | 49501 K     | Crankshaft front post, cp.           |
| 3        | 551 278 R91 | Crankshaft, front, complete.             | 28       | .....       | Machine bolt, 3/8 x 4" (with nut).   |
| 4        | 551 284 R1  | Crankshaft, rear, complete.              | 29       | .....       | Machine bolt, 3/8 x 1" (with nut).   |
| 5        | 10110 K     | Adjuster plate.                          | 30       | .....       | Machine bolt, 3/8 x 7/8" (with nut). |
| 6        | 1008 K      | Adjuster sprocket, 6 teeth.              | 18099 KA | .....       | .....                                |
| 7        | 10687 K     | Pin, 5/16" rd. x 1-3/8".                 | 20852 KA | .....       | .....                                |
| 8        | 10109 K     | Retaining washer.                        | 48485 KA | .....       | .....                                |
| 9        | M 23361     | Roller, 3/8 x 1-13/16" pipe.             | 31       | .....       | .....                                |
| 10       | .....       | Carriage bolt, 1/4 x 2-1/2" (with nut).  | 48498 KA | .....       | .....                                |
| 11       | 38334 K     | Plate.                                   | .....    | .....       | .....                                |
| 12       | .....       | Flat washer, 1-3/32 x 1-3/8" x 16 ga.    | 32       | .....       | .....                                |
| 13       | .....       | Cotter, 3/16 x 1-1/4".                   | 33       | .....       | .....                                |
| 14       | U 5350      | Pin, 5/16 x 1-11/16 (with 1/8" cotter).  | 34       | .....       | .....                                |
| 15       | 18205 K     | "U" bolt.                                | 22539 K  | .....       | .....                                |
| 16       | 551 283 R91 | Adjusting quadrant, complete.            | .....    | .....       | .....                                |
| 17       | .....       | Cotter, 3/16 x 1-1/4".                   | 22545 K  | .....       | .....                                |
| 18       | 24151 K     | Washer.                                  | .....    | .....       | .....                                |
| 19       | .....       | Machine bolt, 5/16 x 1-1/2" (with nut).  | U 14481  | .....       | .....                                |
| 20       | .....       | Flat washer, 1-3/32 x 1-3/8" x 16 ga.    | 20853 K  | .....       | .....                                |
| 21       | 18063 K     | Adjusting rack.                          | 20851 K  | .....       | .....                                |
| 22       | M 23360     | Spreader pipe, 1/8 x 1-7/8".             | .....    | .....       | .....                                |
| 23       | 10110 K     | Adjuster plate.                          | 40       | .....       | .....                                |
| 24       | .....       | Machine bolt, 3/8 x 7/8" (with nut).     |          |             |                                      |
| 25       | .....       | Carriage bolt, 5/16 x 4-1/4" (with nut). |          |             |                                      |

● - For Power Drive Machines.

● - For Engine Drive Machines.

REEL ADJUSTING PARTS

B-852 A



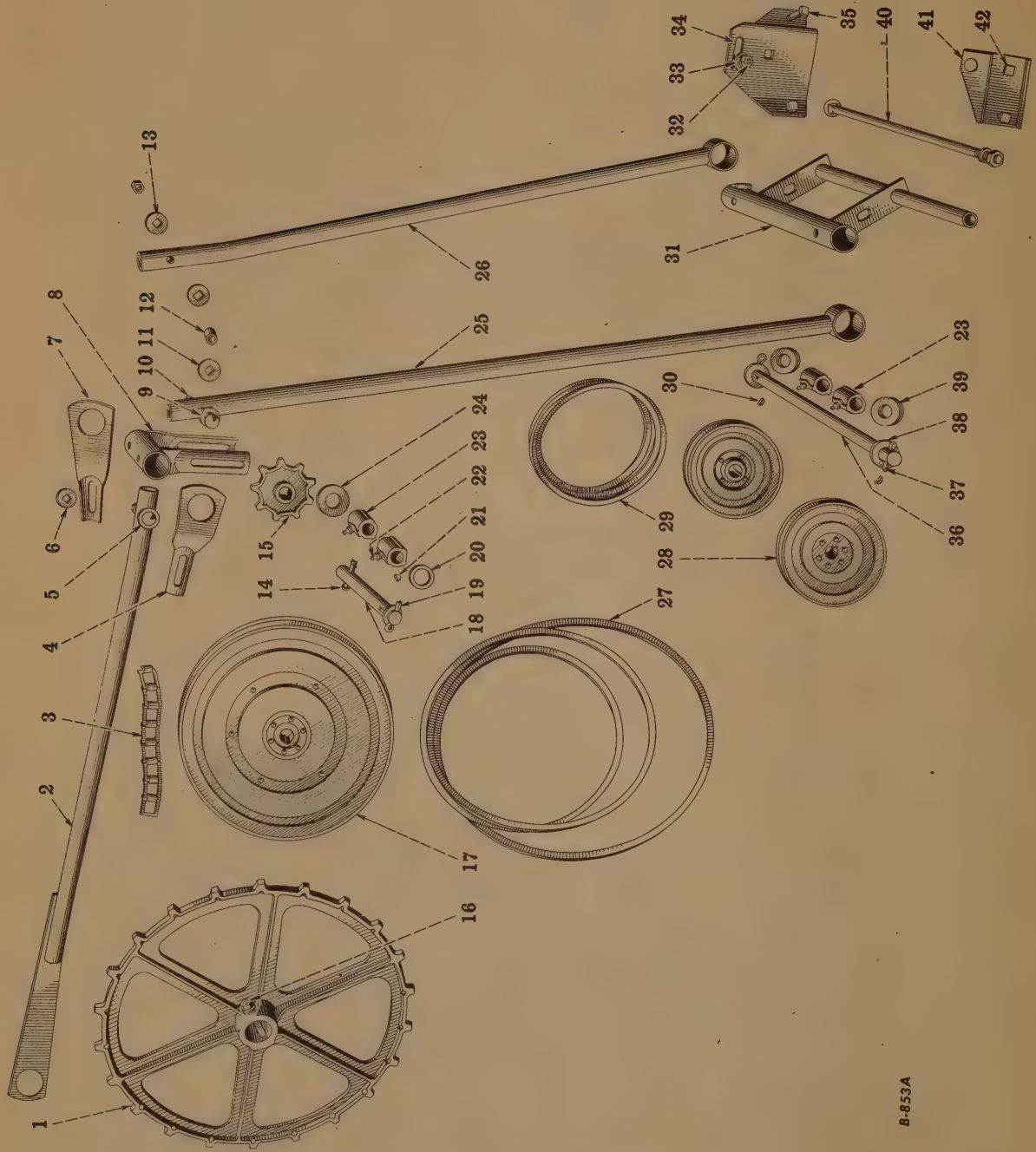


## REEL ADJUSTING PARTS - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                              | Ref. No. | Part Number | Description                                                           |
|----------|-------------|----------------------------------------------------------|----------|-------------|-----------------------------------------------------------------------|
| 1        | Q 1331      | Pin, 3/8 x 2" (drilled) (with 1/8 x 5/8" cotter).        | 33       | .....       | Round slotted head bolt, 1/4 x 3/4" (with nut).                       |
| 2        | 38335 K     | Reel adjusting rack.                                     | 34       | 21741 K     | Collar.                                                               |
| 3        | .....       | Washer, 29/32 x 1-1/2" x 16 ga.                          | 35       | .....       | Washer, 1-13/32 x 2-1/4" x 16 ga.                                     |
| 4        | 21730 K     | Pin retainer.                                            | 36       | .....       | Machine bolt, 7/16 x 1-1/4" (with nut).                               |
| 5        | .....       | Cotter, 5/16 x 1-1/2".                                   | 37       | .....       | Washer, 15/32 x 1-1/8" x 11 ga.                                       |
| 6        | 10687 K     | Pin.                                                     | 38       | 3989 N      | Bushing (3/8 x 7/32" pipe).                                           |
| 7        | 1008 K      | Pinion.                                                  | 39       | .....       | Machine bolt, 3/8 x 1-7/8" (with nut).                                |
| 8        | 21742 K     | Shaft.                                                   | 40       | 21748 KA    | Bearing bracket.                                                      |
| 9        | Q 3529      | Pin, 5/16 x 1-5/8" (drilled) (with 1/8 x 5/8" cotter).   | 41       | 18208 K     | Tie plate.                                                            |
| 10       | 2129 K      | Knuckle, rear.                                           | 42       | 49501 K     | Adjusting crankshaft front post, cp.                                  |
| 11       | .....       | Machine bolt, 3/8 x 1-7/8" (with nut).                   | 43       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                |
| 12       | Q 1178      | Pin, 7/16 x 2-1/2" (drilled) (with 3/16 x 3/4" cotter).  | 44       | 38374 K     | Equalizer balance spring clip.                                        |
| 13       | Q 3515      | Pin, 1/4 x 1-5/8" (drilled) (with 1/8 x 5/8" cotter).    | 45       | 38373 K     | Eye bolt.                                                             |
| 14       | 2128 K      | Knuckle, front with swivel.                              | 46       | M 93370     | Balance spring.                                                       |
| 15       | 550 230 R1  | Shaft, rear.                                             | 47       | .....       | Carriage bolt, 5/16 x 7/8" (with nut).                                |
| 16       | 351 275 R91 | Tube, front.                                             | 48       | 38379 KA    | Equalizer tube, complete.                                             |
| 17       | .....       | Washer, 1-13/32 x 2-1/4" x 16 ga.                        | 49       | .....       | Set screw, 3/8 x 3/4" (cup point) (with 3/8" hex. type "D" NC 2 nut). |
| 18       | .....       | Cotter, 3/16 x 1-7/8".                                   | 50       | 38368 K     | Reel adjusting arm, right front.                                      |
| 19       | 551 285 R1  | Spring retainer.                                         | 51       | 28680 K     | Reel post brace.                                                      |
| 20       | No. 9 DS    | Spring.                                                  | 52       | 38386 K     | Reel post, complete.                                                  |
| 21       | U 5350      | Pin, 5/16 x 1-11/16" (drilled) (with 1/8 x 5/8" cotter). | 53       | .....       | Cotter, 3/16 x 2".                                                    |
| 22       | 551 280 R91 | Crank, complete.                                         | 54       | 27869 K     | Washer, 1-11/32 x 2" x 18 ga.                                         |
| 23       | 551 282 R91 | Quadrant, complete.                                      | 55       | .....       | Machine bolt, 3/8 x 4" (with nut).                                    |
| 24       | D 3376      | Pin, 1/2 x 2-3/4" (drilled) (with 3/16 x 7/8" cotter).   | 56       | .....       | Carriage bolt, 5/16 x 4-1/4" (with nut).                              |
| 25       | 38926 K     | Swivel.                                                  | 57       | 38364 K     | Brace.                                                                |
| 26       | 21922 K     | Washer, 1-11/32 x 1-19/32" x 20 ga.                      | 58       | .....       | Machine bolt, 3/8 x 1" (with nut).                                    |
| 27       | 38372 K     | Reel shaft bearing, left.                                | 59       | .....       | Washer, 13/32 x 1" x 11 ga.                                           |
| 28       | .....       | Washer, 13/32 x 13/16" x 16 ga.                          | 60       | .....       | Cotter, 3/16 x 1-1/4".                                                |
| 29       | 28908 KA    | Pivot bushing.                                           |          |             |                                                                       |
| 30       | 28688 K     | Reel adjusting arm, left front.                          |          |             |                                                                       |
| 31       | 28668 K     | Reel adjusting arm, rear.                                |          |             |                                                                       |
| 32       | 38375 K     | Equalizer link.                                          |          |             |                                                                       |

POWER DRIVE REEL



B-853A

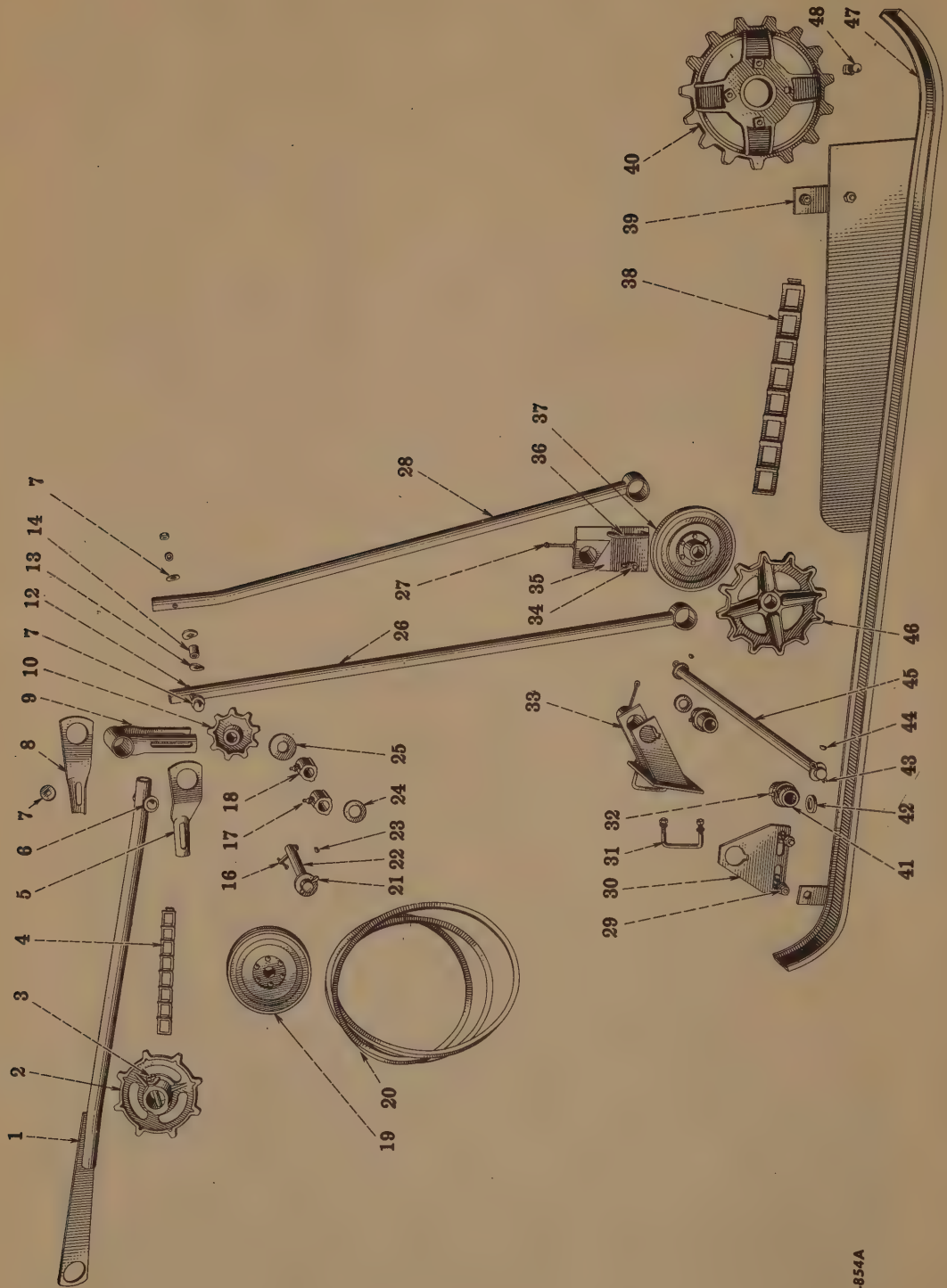
## POWER DRIVE REEL - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                            | Ref. No. | Part Number | Description                                          |
|----------|-------------|--------------------------------------------------------|----------|-------------|------------------------------------------------------|
| 1        | 2021 K      | Sprocket, 22 teeth.                                    | 21       | 103 906     | Key, 5/32 x 3/4" (Woodruff No. 8).                   |
| 2        | 38355 K     | Spreader arm, upper complete.                          | 22       | 119 512     | Lubrication fitting, 1/8", straight.                 |
| 3        | No. 32      | Steel chain link. (Chain contains 98 links).           | 23       | 1003 K      | Bearing.                                             |
| 4        | 38353 K     | Bracket, left.                                         | 24       | .....       | Washer, 25/32 x 2" x 16 ga.                          |
| 5        | .....       | Carriage bolt, 3/8 x 2-1/8" (with nut).                | 25       | 38342 K     | Spreader arm, lower left.                            |
| 6        | 10688 K     | Washer.                                                | 26       | 38345 K     | Spreader arm, lower right.                           |
| 7        | 38352 K     | Bracket, right.                                        | 27       | 38332 K     | Fractional horse-power "V" belt ("A" section).       |
| 8        | 38339 K     | Jackshaft tube, complete.                              | 28       | 18635 K     | Pulley (6" diam.).                                   |
| 9        | .....       | Washer, 17/32 x 1" x 16 ga.                            | 29       | 38331 K     | Fractional horse-power "V" belt ("A" section).       |
| 10       | .....       | Carriage bolt, 3/8 x 4-1/4" (with nut).                | 30       | 103 906     | Key, 5/32 x 3/4" (Woodruff No. 8).                   |
| 11       | 10688 K     | Washer.                                                | 31       | 38356 K     | Countershaft tube, complete.                         |
| 12       | M 76530,    | Spacer pipe, 3/8 x 23/32".                             | 32       | .....       | Carriage bolt, 1/2 x 1-1/4" (with nut).              |
| 13       | .....       | Washer, 13/32 x 1" x 16 ga.                            | 33       | .....       | Washer, 17/32 x 1-1/4" x 16 ga.                      |
| 14       | C 1191      | Pin, 5/16 x 1-1/2" (drilled) (with 1/8 x 5/8" cotter). | 34       | 38358 K     | Countershaft bracket, right.                         |
| 15       | 1934 K      | Sprocket, 6 teeth (Slow speed).                        | 35       | .....       | Machine bolt, 3/8 x 2" (with nut).                   |
|          | 1935 K      | Sprocket, 8 teeth (Medium speed).                      | 36       | 38349 K     | Countershaft, 3/4" rd. x 17-5/32".                   |
| 16       | 1937 K      | Sprocket, 9 teeth (Fast speed).                        | 37       | .....       | Cotter, 1/4 x 1-1/2".                                |
|          | .....       | Machine bolt, 3/8 x 2-1/4" (with nut).                 | 38       | .....       | Washer, 25/32 x 1-1/2" x 16 ga.                      |
| 17       | 38330 K     | Pulley (12" diam.).                                    | 39       | .....       | Washer, 25/32 x 1-3/4" x 16 ga.                      |
|          | 38337 K     | Jackshaft, 3/4" rd. x 7-3/4".                          | 40       | 38346 K     | Carriage bolt, 1/2 x 17-1/2" (2" thread) (with nut). |
| 18       | .....       | Cotter, 1/4 x 1-1/2".                                  | 41       | 38336 K     | Countershaft bracket, left.                          |
| 19       | .....       | Washer, 25/32 x 1-1/2" x 16 ga.                        | 42       | .....       | Machine bolt, 5/16 x 2" (with nut).                  |
| 20       | .....       |                                                        |          |             |                                                      |



## GROUND DRIVE REEL (Special)



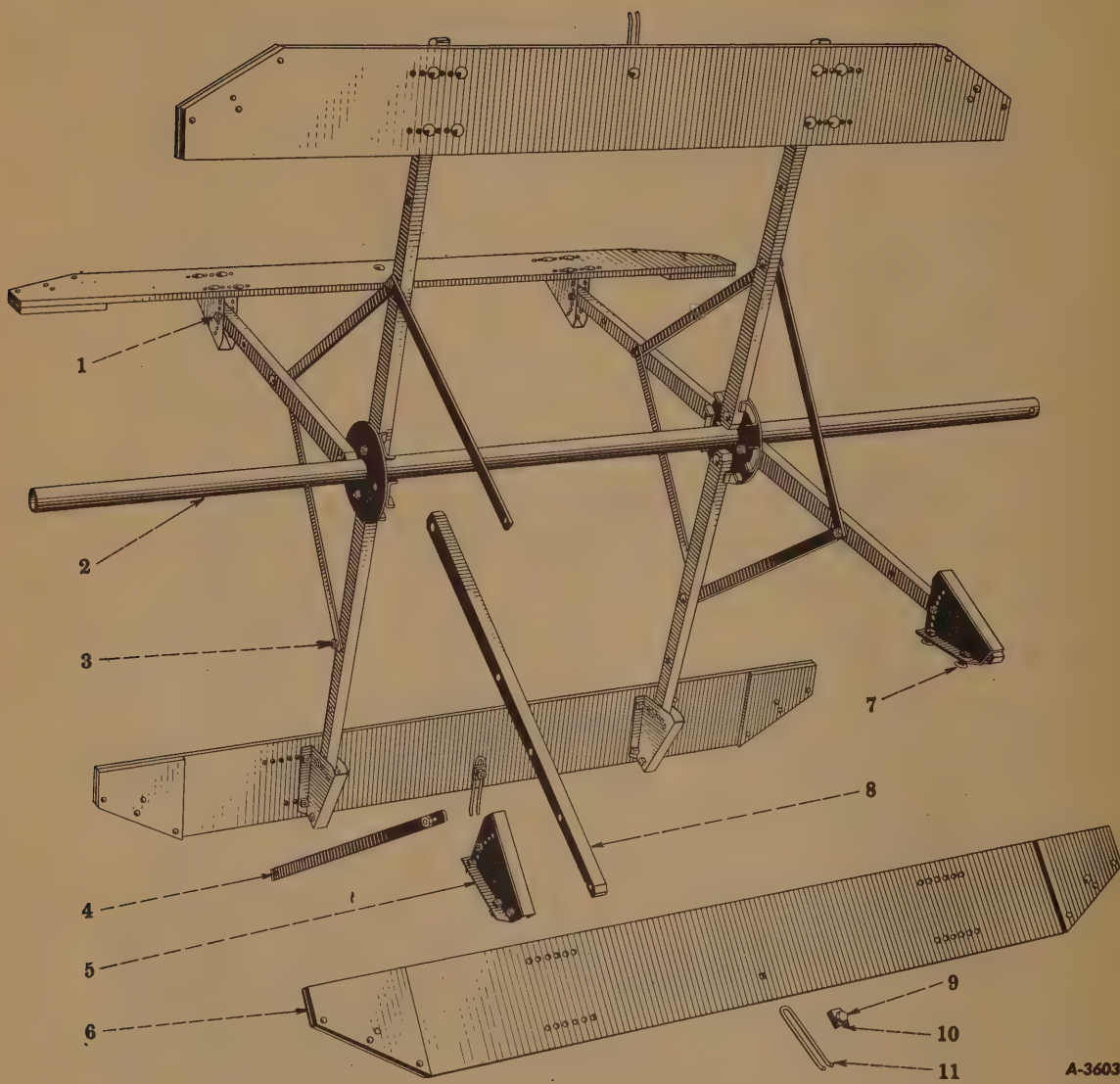
B-854A

## GROUND DRIVE REEL (Special) - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                            | Ref. No. | Part Number | Description                                  |
|----------|-------------|--------------------------------------------------------|----------|-------------|----------------------------------------------|
| 1        | 38355 K     | Spreader arm, upper, complete.                         | 25       | .....       | Washer, 25/32 x 2" x 16 ga.                  |
| 2        | 2519 K      | Sprocket, 8 teeth.                                     | 26       | 38342 K     | Spreader arm, lower left.                    |
| 3        | .....       | Machine bolt, 3/8 x 2-1/4" (with nut).                 | 27       | .....       | Cotter, 1/8 x 2"                             |
| 4        | No. 32      | Steel chain link. (Chain contains 84 links.)           | 28       | 38345 K     | Spreader arm lower, right                    |
| 5        | 38353 K     | Bracket, left.                                         | 29       | .....       | Machine bolt, 3/8 x 2-1/8" (with nut).       |
| 6        | .....       | Carriage bolt, 3/8 x 2-1/8" (with nut).                | 30       | 16204 K     | Countershaft bracket, left.                  |
| 7        | 10688 K     | Washer.                                                | 31       | 17406 K     | "U" bolt.                                    |
| 8        | 38352 K     | Bracket, right.                                        | 32       | Q 3851      | Lubrication fitting, 1/4", straight.         |
| 9        | 38339 K     | Jackshaft tube, complete.                              | 33       | 48461 K     | Reel drive support, right.                   |
| 10       | 1937 K      | Sprocket, 9 teeth                                      | 34       | .....       | Machine bolt, 3/8 x 2" (with nut).           |
| 12       | .....       | Carriage bolt, 3/8 x 4-1/4" (with nut).                | 35       | 48462 K     | Lower spreader arm bearing bracket, right.   |
| 13       | 10688 K     | Washer.                                                | 36       | 17406 K     | "U" bolt.                                    |
| 14       | M 76530     | Spacer pipe, 3/8 x 23/32".                             | 37       | 18635 K     | Pulley (6" diam.).                           |
| 16       | Q 1191      | Pin, 5/16 x 1-1/2" (drilled) (with 1/8 x 5/8" cotter). | 38       | No. 55      | Steel chain link. (Chain contains 71 links). |
| 17       | 119 512     | Lubrication fitting, 1/8", straight.                   | 39       | 17406 K     | "U" bolt.                                    |
| 18       | 1003 K      | Bearing.                                               | 40       | { 1796 K    | Sprocket, 15 teeth (regular).                |
| 19       | 18635 K     | Pulley (6" diam.).                                     | 41       | { 1795 K    | Sprocket, 17 teeth (special).                |
| 20       | 48491 K     | Fractional horse-power "V" belt ("A" section).         | 42       | 1777 K      | Bearing.                                     |
| 21       | .....       | Cotter, 1/4 x 1-1/2".                                  | 43       | .....       | Washer, 25/32 x 1-1/4" x 16 ga.              |
| 22       | 38337 K     | Jackshaft, 3/4" rd. x 7-3/4".                          | 44       | .....       | Cotter, 1/4 x 1-1/2".                        |
| 23       | 11293 V     | Key, 5/32 x 3/4" (Woodruff No. 8).                     | 45       | 103 906     | Key, 5/32 x 3/4" (Woodruff No. 8).           |
| 24       | .....       | Washer, 25/32 x 1-1/2" x 16 ga.                        | 46       | 48465 K     | Countershaft, 3/4" rd. x 24-1/8".            |
|          |             |                                                        | 47       | { 1789 K    | Sprocket, 12 teeth.                          |
|          |             |                                                        | 48       | { 1790 K    | Sprocket, 15 teeth.                          |
|          |             |                                                        |          | 18142 K     | Countershaft drive chain guide.              |
|          |             |                                                        |          | .....       | No. 3 plow bolt, 5/16 x 1".                  |

REEL



A-3603

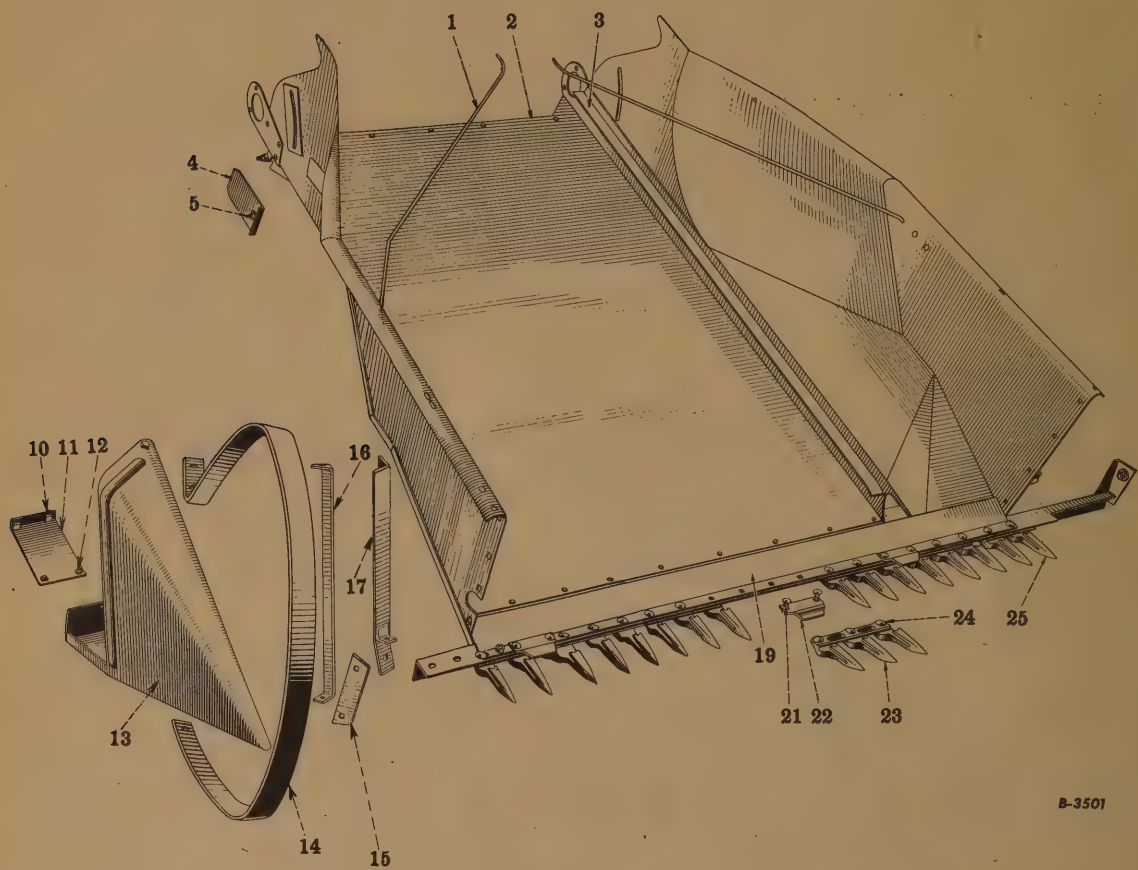


## REEL - Continued

*Index to Reference Numbers shown in illustration on opposite page.*

| Ref.<br>No. | Part<br>Number | Description                              |
|-------------|----------------|------------------------------------------|
| 1           | .....          | Machine bolt, 1/4 x 1-1/4" (with nut).   |
| 2           | 38940 K        | Reel shaft, complete.                    |
| 3           | .....          | Carriage bolt, 5/16 x 1-3/8" (with nut). |
| 4           | M 34751        | Reel arm tie strap.                      |
| 5           | 38538 K        | Reel bat adjusting clamp.                |
| 6           | 28645 K        | Reel bat, complete.                      |
| 7           | .....          | Step bolt, 1/4 x 3/4" (with nut).        |
| 8           | 27537 K        | Reel arm.                                |
| 9           | .....          | Carriage bolt, 5/16 x 1-1/8" (with nut). |
| 10          | 38524 K        | Reel bat hair pin clamp.                 |
| 11          | 38523 K        | Reel bat hair pin.                       |

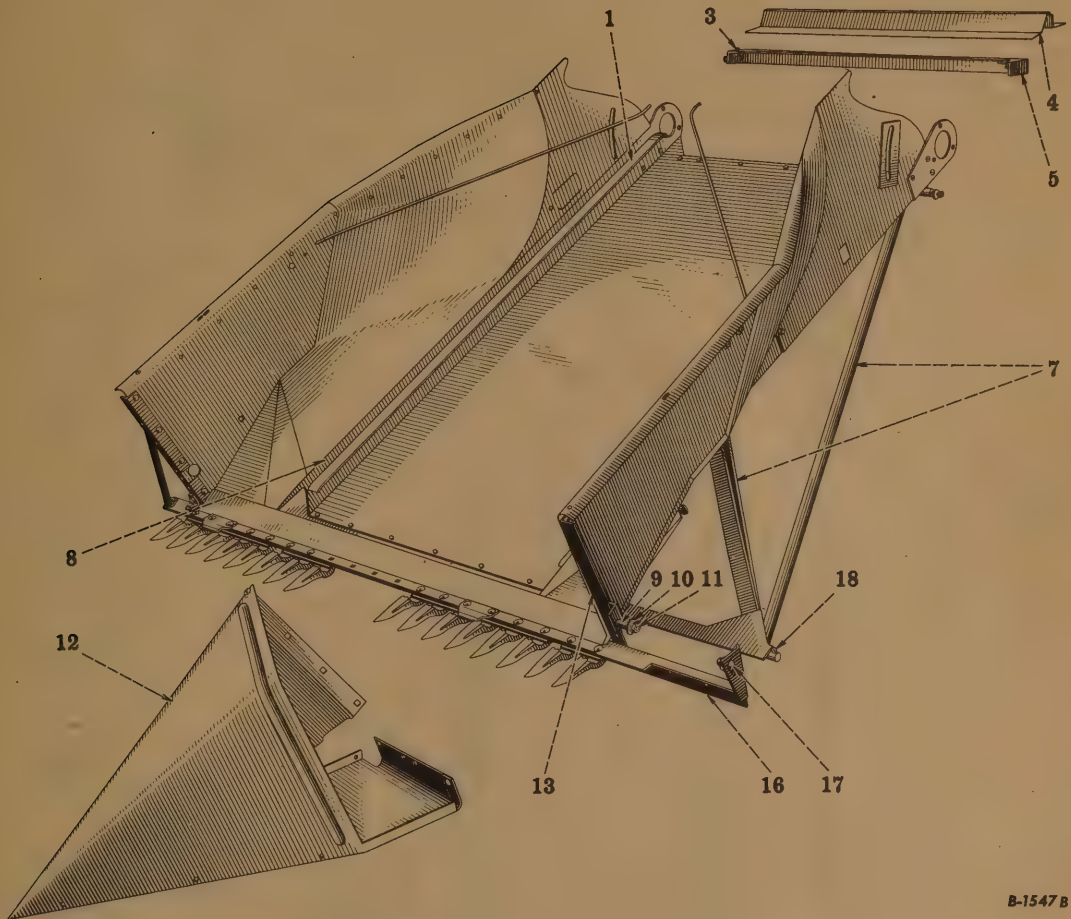
FEEDER



B-3501

| Ref. No. | Part Number | Description                                       | Ref. No. | Part Number | Description                                    |
|----------|-------------|---------------------------------------------------|----------|-------------|------------------------------------------------|
| 1        | 38740 K     | Fender rod.                                       | 14       | 18551 K     | Fender bar                                     |
| 2        | 28665 KC    | Feed conveyor sides and bottom.                   |          | .....       | Round slotted head bolt 1/4 x 1/2" (with nut). |
| 3        | 550 907 R1  | Canvas guide, left.                               |          | .....       | Round slotted head bolt 1/4 x 3/4" (with nut). |
| 4        | 17331 K     | Slot cover.                                       | 15       | 49334 K     | Hole cover.                                    |
| 5        | .....       | Carriage bolt, 1/4 x 5/8" (with Q 3504 wing nut). | 16       | 28770 K     | Brace.                                         |
| 10       | .....       | Machine bolt, 5/16 x 3/4" (with nut).             | 17       | 551 101 R91 | Support angle, right.                          |
| 11       | .....       | Round slotted head bolt, 1/4 x 3/8" with nut).    | 19       | 28625 K     | Canvas shield.                                 |
| 12       | 17332 KA    | Outside divider reinforcement.                    | 21       | .....       | Guard bolt, 3/8 x 1-3/8" (with nut).           |
| 13       | 28664 K     | Outside divider.                                  | 22       | 16212 K     | Sickle clip.                                   |
|          |             |                                                   | 23       | 1457 KB     | Guard.                                         |
|          |             |                                                   | 24       | .....       | Guard bolt, 3/8 x 1-1/8" (with nut).           |
|          |             |                                                   | 25       | 1814 KA     | Guard, left.                                   |

## FEEDER - Continued

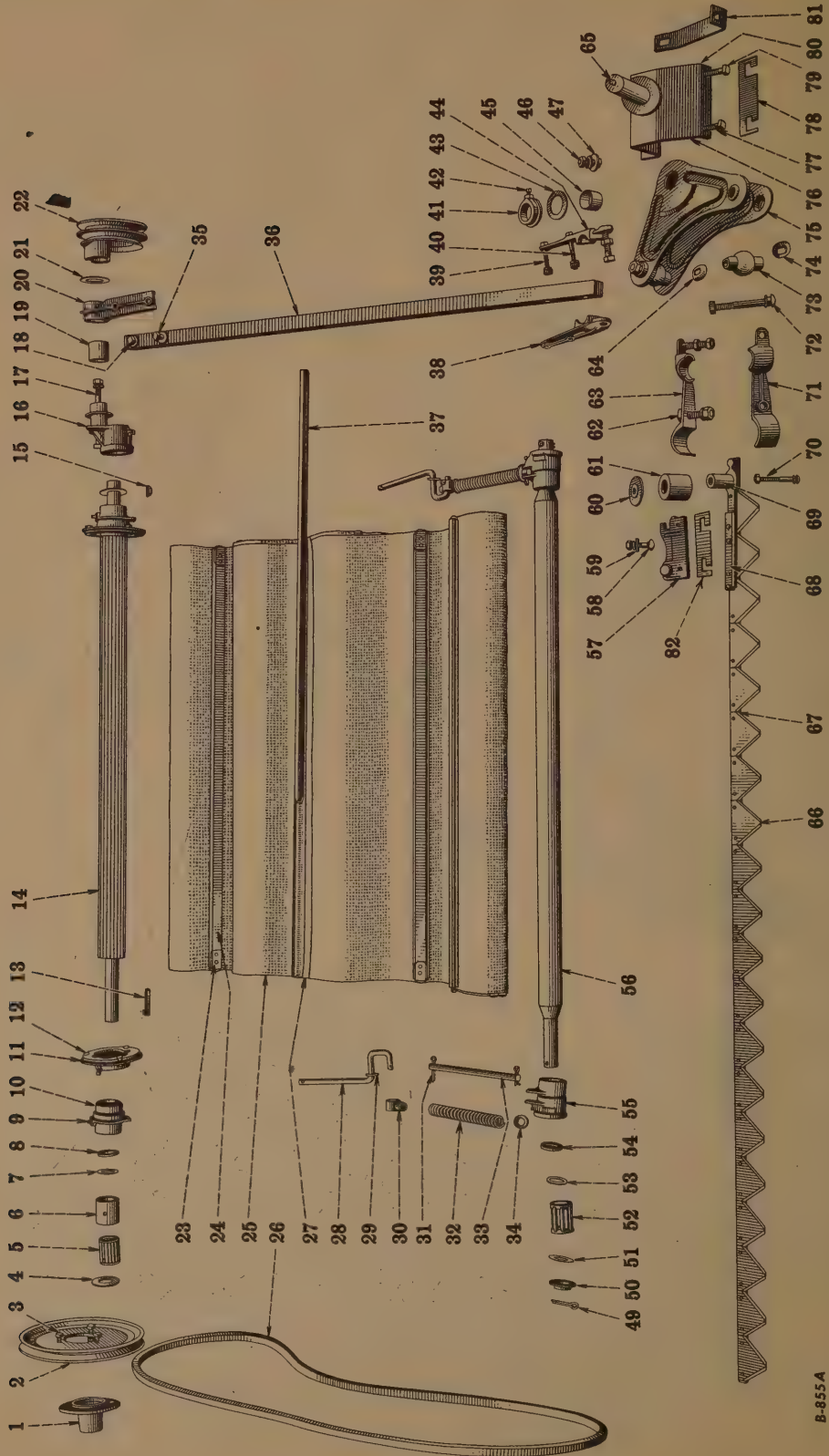


B-1547 B

| Ref. No. | Part Number | Description                            | Ref. No. | Part Number | Description                             |
|----------|-------------|----------------------------------------|----------|-------------|-----------------------------------------|
| 1        | 550 908 R1  | Canvas guide, right.                   | 11       | .....       | Machine bolt, 7/16 x 2" (with nut).     |
| 3        | .....       | Carriage bolt, 5/16 x 7/8" (with nut). | 12       | 28663 KA    | Inside divider, complete.               |
| 4        | 18311 K     | Concave front extension.               | 13       | 551 100 R91 | Support angle, left, complete.          |
| 5        | 48078 K     | Feed plate support angle.              | 16       | 28635 K     | Cutter bar, complete.                   |
| 7        | 28666 K     | Feed conveyor truss, complete.         | 17       | .....       | Carriage bolt, 3/8 x 1-1/4" (with nut). |
| 8        | 38513 K     | Wearing plate.                         |          | .....       | Washer, 13/32 x 1-1/8" x 16 ga.         |
| 9        | M 73916     | Pivot pipe spacer, 3/8 x 1-1/4" pipe.  |          | M 83484     | Pipe spacer 3/8 x 3/8".                 |
| 10       | .....       | Washer, 15/32 x 1-1/8" x 16 ga.        | 18       | .....       | Cotter, 3/16 x 1-1/4".                  |



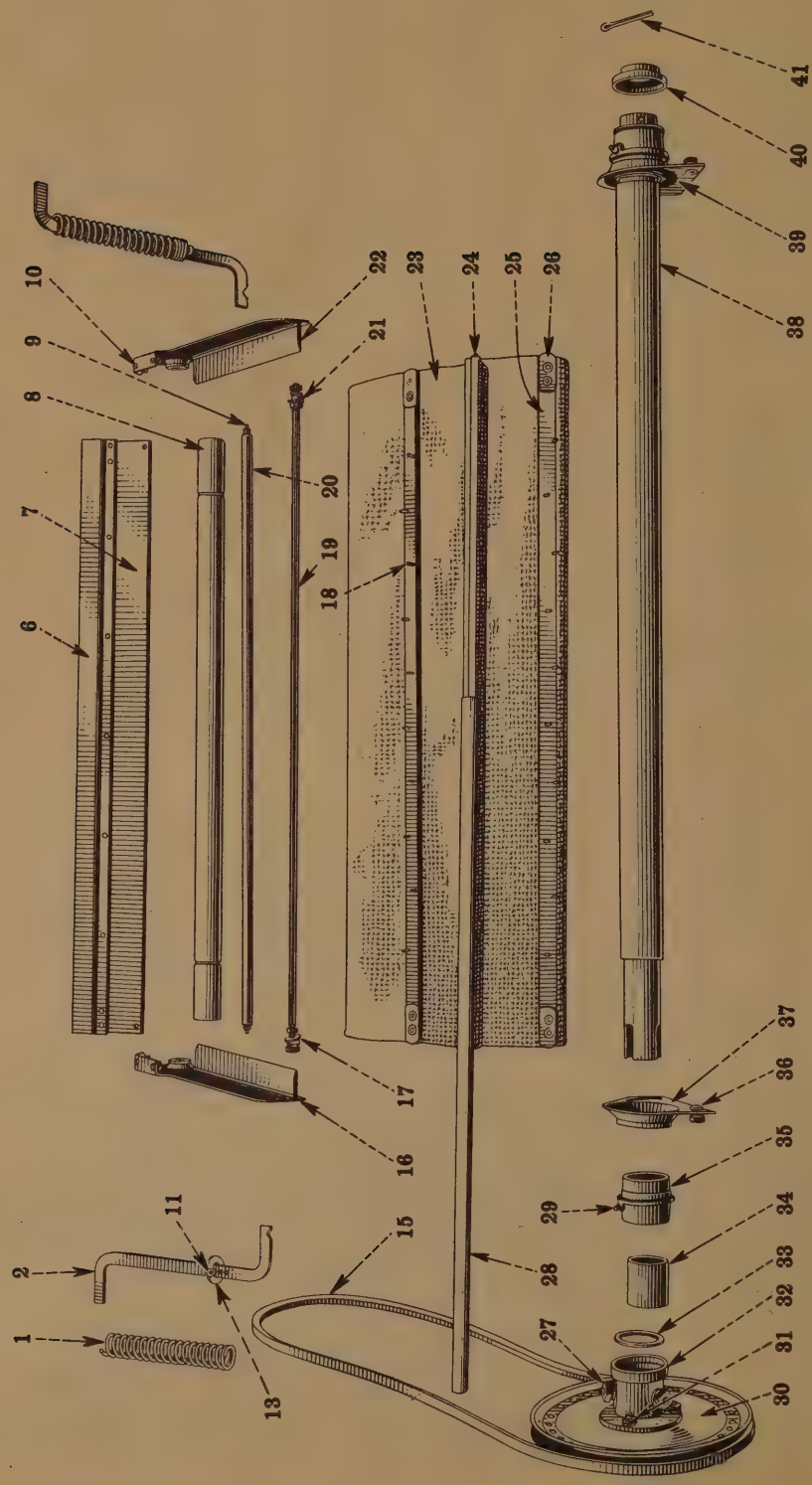
KNIFE DRIVE PARTS, FEED CONVEYOR ROLLERS AND CANVAS, ETC.,



## KNIFE DRIVE PARTS, FEED CONVEYOR ROLLERS AND CANVAS, ETC. - Continued

| Ref. No. | Part Number | Description                                   | Ref. No. | Part Number | Description                                                                      |
|----------|-------------|-----------------------------------------------|----------|-------------|----------------------------------------------------------------------------------|
| 1        | 2441 K      | Sheave hub.                                   | 41       | H 4509      | Collar.                                                                          |
| 2        | 18113 K     | Sheave (10" diam.).                           | 42       | .....       | Set screw, 3/8 x 5/8" (cup point).                                               |
| 3        | .....       | Machine bolt, 3/8 x 1" (with nut).            | 43       | .....       | Washer, 1-9/32 x 2-1/2" x 16 ga.                                                 |
| 4        | .....       | Washer, 1-5/32 x 2-1/4" x 16 ga.              | 44       | 17743 K     | Connecting strap, lower (with stud).                                             |
| 5        | 21460 VA    | Roller bearing.                               | 45       | 38710 K     | Bushing.                                                                         |
| 6        | MA 90565    | Outer race.                                   | 46       | .....       | Machine bolt, 7/16 x 1-1/4" (with nut).                                          |
| 7        | .....       | Washer, 1-5/32 x 1-3/4" x 16 ga.              | 47       | .....       | Washer, 15/32 x 1-1/8" x 16 ga.                                                  |
| 8        | 28722 K     | Felt washer.                                  | 49       | .....       | Cotter, 3/16 x 1-1/2".                                                           |
| 9        | Q 3851      | Lubrication fitting, 1/4" straight.           | 50       | 16290 K     | Collar.                                                                          |
| 10       | 2429 K      | Box.                                          | 51       | .....       | Washer, 1-1/32 x 1-7/8" x 16 ga.                                                 |
| 11       | 15856 K     | Bearing bracket, complete (with 1774 K ring). | 52       | H 39034     | Roller bearing.                                                                  |
| 12       | .....       | No. 3 plow bolt, 5/16 x 1" (with nut).        | 53       | .....       | Felt washer.                                                                     |
| 13       | Q 3930      | Key, 5/16 x 5/16 x 1-3/4" (gib key).          | 54       | 20387 H     | Box.                                                                             |
| 14       | 28988 K     | Drive roller, complete.                       | 55       | 1922 K      | Idle roller.                                                                     |
| 15       | 13055 D     | Key, 5/16 x 1" (Woodruff "B").                | 56       | 18569 K     | Knife head guide.                                                                |
| 16       | 2430 K      | Pitman crank.                                 | 57       | 2164 K      | Carriage bolt, 3/8 x 1-5/8" (with nut).                                          |
| 17       | .....       | Machine bolt, 1/2 x 5-1/4" (with nut).        | 58       | .....       | Washer.                                                                          |
| 18       | .....       | Machine bolt, 3/8 x 2-1/4" (with nut).        | 59       | 26708 K     | Washer.                                                                          |
| 19       | 18522 KA    | Washer, 13/32 x 1" x 16 ga.                   | 60       | 16276 K     | Rubber bushing.                                                                  |
| 20       | 2424 K      | Bushing (for 2424 K).                         | 61       | 17461 K     | Machine bolt, 1/2 x 1-7/8" (with nut and three 17/32 x 1-1/4" x 16 ga. washers). |
| 21       | .....       | Connecting strap, upper.                      | 62       | .....       | Bell crank link, lower rear, complete with stud.                                 |
| 22       | 1939 K      | Washer, 1-13/32 x 2" x 16 ga.                 | 63       | 17744 K     | Clamp washer, upper.                                                             |
| 23       | M 13400     | Pulley (double).                              | 64       | 16248 K     | Lubrication fitting, 1/4", straight.                                             |
| 24       | 17974 K     | Canvas slat plate.                            | 65       | Q 3851      | Sickle section (serrated).                                                       |
| 25       | 28662 KC    | Canvas, complete.                             | 66       | 24978 K     | Sickle, complete.                                                                |
| 26       | 25132 K     | Canvas extension, complete.                   | 67       | 28337 K     | Knife head slide.                                                                |
| 27       | 16651 K     | "V" belt, 104-3/16" x 5/8" ("BB" Section).    | 68       | 22388 K     | Knife head.                                                                      |
| 28       | 17969 K     | Coupler rod.                                  | 69       | 1847 KA     | Carriage bolt, 5/16 x 2-3/4" (with nut).                                         |
| 29       | 17454 K     | Rod lever.                                    | 70       | .....       | Bell crank link, lower front.                                                    |
| 30       | .....       | Washer, 15/32 x 15/16" x 16 ga.               | 71       | 17728 K     | Carriage bolt, 1/2 x 3-3/4" (with nut).                                          |
| 31       | 1844 K      | Rod guide.                                    | 72       | .....       | Sickle bell crank ball.                                                          |
| 32       | .....       | Cotter, 3/16 x 1".                            | 73       | 1845 K      | Clamp washer, lower.                                                             |
| 33       | 17460 K     | Spring.                                       | 74       | 16249 K     | Sickle bell crank, complete (with 28710 K).                                      |
| 34       | 17453 K     | Rod.                                          | 75       | 19408 KC    | Bell crank support, complete (with stud).                                        |
| 35       | .....       | Washer, 17/32 x 1" x 16 ga.                   | 76       | 28632 K     | Machine bolt, 7/16 x 1-3/8" (with nut).                                          |
| 36       | 28643 K     | Machine bolt, 3/8 x 2" (with nut).            | 77       | .....       | Shim.                                                                            |
| 37       | 18065 KA    | Washer, 13/32 x 1" x 11 ga.                   | 78       | 28348 KA    | Machine bolt, 7/16 x 1-5/8" (with nut).                                          |
| 38       | 17726 K     | Sickle pitman.                                | 79       | .....       | Washer, 1-9/32 x 2-1/2" x 16 ga.                                                 |
| 39       | .....       | Coupler.                                      | 80       | 28760 K     | Cutter bar brace.                                                                |
| 40       | .....       | Connecting strap, lower.                      | 81       | .....       | Shim.                                                                            |
|          | .....       | Machine bolt, 3/8 x 2" (with nut).            | 82       | 28347 KB    |                                                                                  |
|          | .....       | Machine bolt, 3/8 x 2-3/8" (with nut).        |          |             |                                                                                  |

UPPER FEEDER ROLLERS AND CANVAS, ETC.



A-3606A

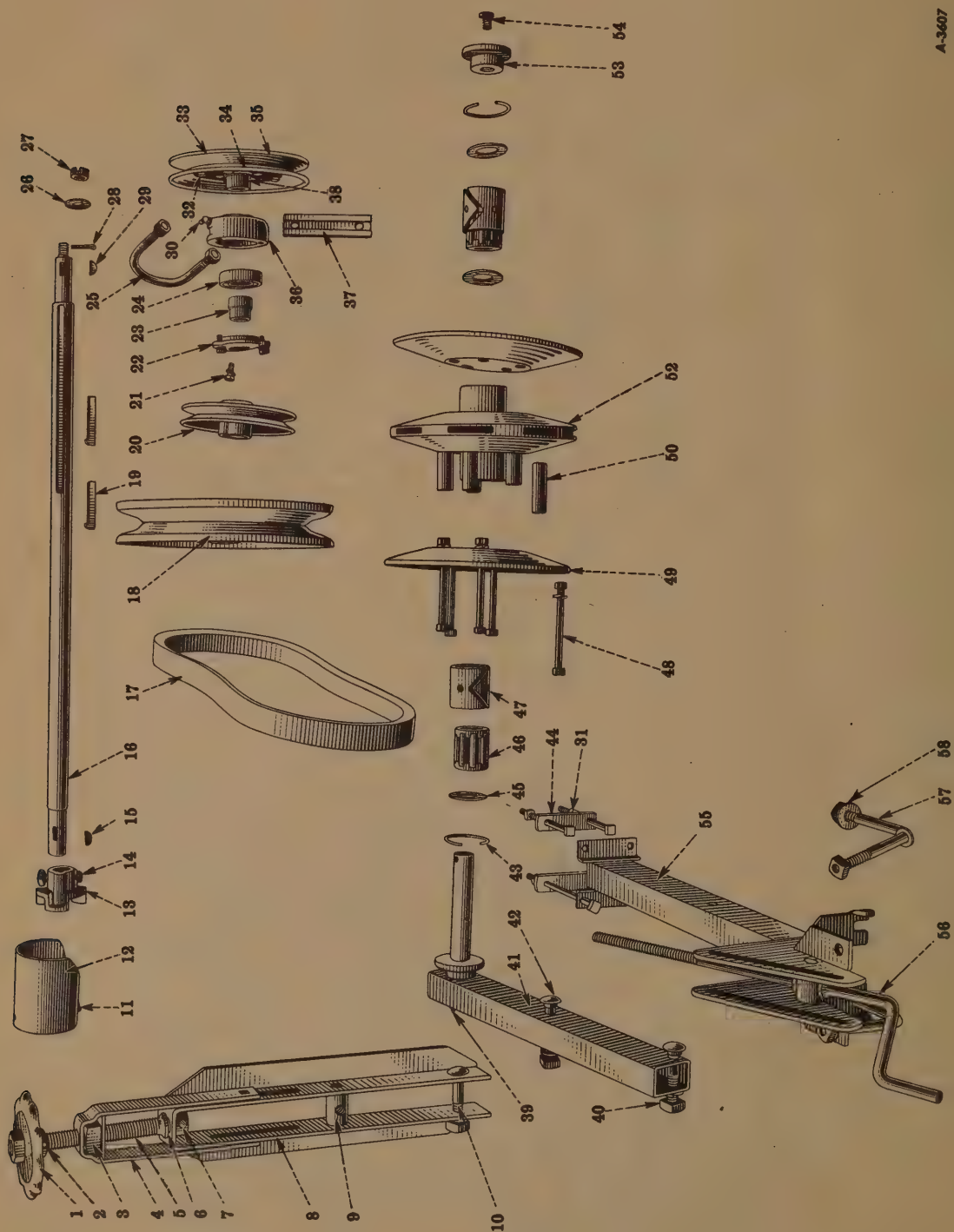


## UPPER FEEDER ROLLERS AND CANVAS, ETC.: - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                     | Ref. No. | Part Number | Description                                                           |
|----------|-------------|-------------------------------------------------|----------|-------------|-----------------------------------------------------------------------|
| 1        | 22501 K     | Spring.                                         | 26       | M 13400     | Canvas slat plate.                                                    |
| 2        | 22505 KA    | Spring lever.                                   | 27       | .....       | Machine bolt, 7/16 x 1" (with nut).                                   |
| 6        | 16349 K     | Cross sheet webbing.                            | 28       | 18065 KA    | Coupler.                                                              |
| 7        | 15851 K     | Cross sheet, complete (with webbing).           | 29       | Q 3851      | Lubrication fitting, 1/4", straight.                                  |
| 8        | 16382 K     | Roller, rear, complete.                         | 30       | 38782 K     | Pulley (10-3/8" diam.).                                               |
| 9        | Q 3851      | Lubrication fitting, 1/4", straight.            | 31       | .....       | Machine bolt, 5/16 x 7/8" (with nut).                                 |
| 10       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut). | 32       | 1785 K      | Hub.                                                                  |
| 11       | .....       | Cotter, 3/16 x 1".                              | 33       | .....       | Flat washer, 1-13/16 x 2-1/4" x 16 ga.                                |
| 13       | .....       | Washer, 17/32 x 1" x 11 ga.                     | 34       | 18519 K     | Oilite bearing.                                                       |
| 15       | 22198 K     | "W" belt, 77-7/8" ("B" Section).                | 35       | 1770 K      | Bearing box.                                                          |
| 16       | 16384 KA    | Arm, right, complete.                           | 36       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                |
| 17       | .....       | Flat washer, 13/32 x 1" x 16 ga.                | 37       | 16671 K     | Bracket, right front.                                                 |
| 18       | 17976 K     | Canvas slat nail.                               | 38       | 49381 K     | Roller, front, complete.                                              |
| 19       | 16181 K     | Rod.                                            | 39       | 16670 K     | Bracket, left front.                                                  |
| 20       | 16192 K     | Roller shaft, rear, 5/8" rd. x 35-1/8".         | 40       | 16288 K     | Collar.                                                               |
| 21       | No. 1268    | Spacer pipe, 3/8 x 1/4".                        | 41       | .....       | Cotter, 1/4 x 2-1/4".                                                 |
| 22       | 16383 KA    | Arm, left, complete.                            | ...      | 17970 KA    | Canvas take-up bar (for shortening stretched canvas, when necessary). |
| 23       | 18137 KB    | Canvas, complete.                               |          |             |                                                                       |
| 24       | 17969 K     | Coupler rod.                                    |          |             |                                                                       |
| 25       | 19144 K     | Canvas slat.                                    |          |             |                                                                       |

## MAIN DRIVE COUNTERSHAFT AND VARIABLE SPEED PULLEYS AND SUPPORTS



## MAIN DRIVE COUNTERSHAFT AND VARIABLE SPEED PULLEYS AND SUPPORTS

- Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                                                | Ref. No. | Part Number | Description                                                                                                           |
|----------|-------------|----------------------------------------------------------------------------|----------|-------------|-----------------------------------------------------------------------------------------------------------------------|
| 1        | 1840 K      | Hand wheel.                                                                | 30       | Q 3853      | Lubrication fitting, 1/4",                                                                                            |
| 2        | .....       | Rivet, 3/16 x 1-1/2".                                                      | 31       | .....       | 67-1/20 elbow.                                                                                                        |
| 3        | .....       | Square nut, 3/4" N.C.                                                      | 32       | .....       | Machine bolt, 5/16 x 2-1/8".                                                                                          |
| 4        | 17423 K     | Adjusting yoke, complete.                                                  | 33       | 20377 KA    | Carriage bolt, 5/16 x 1-1/4".                                                                                         |
| 5        | 17410 K     | Adjusting screw.                                                           | 34       | 21660 K     | Sheave, complete.                                                                                                     |
| 6        | .....       | Flat washer, 19/32 x 1" x 11 ga.                                           | 35       | 21668 K     | Shim.                                                                                                                 |
| 7        | 17408 K     | Adjusting screw collar.                                                    | 36       | 2049 K      | Disc.                                                                                                                 |
| 8        | 17415 KA    | Pulley arm support, complete.                                              | 37       | 1779 K      | Bearing box.                                                                                                          |
| 9        | 18659 K     | Tightener screw nut.                                                       | 38       | 2122 K      | Pillow block.                                                                                                         |
| 10       | .....       | Carriage bolt, 1/2 x 2-5/8" (with nut and 23/32 x 1-1/4" x 11 ga. washer). | 39       | 109 350     | Hub.                                                                                                                  |
| 11       | .....       | Round slotted head bolt, 1/4 x 1-1/8".                                     | 40       | .....       | Lubrication fitting, 1/8",                                                                                            |
| 12       | 18594 K     | Shield.                                                                    | 41       | 21227 KA    | 67-1/20 elbow.                                                                                                        |
| 13       | 2045 K      | Coupling.                                                                  | 42       | .....       | Carriage bolt, 1/2 x 2-3/4" (with nut and one 23/32 x 1-1/4" x 11 ga. washer and one 17/32 x 1-1/4" x 16 ga. washer). |
| 14       | .....       | Machine bolt, 1/2 x 2-1/8" (with nut).                                     | 43       | 17420 K     | Pulley arm and shaft, complete.                                                                                       |
| 15       | 103 907     | Key, 3/16 x 7/8" (Woodruff No.11).                                         | 44       | 21517 K     | Carriage bolt, 1/2 x 2-7/8" (with nut).                                                                               |
| 16       | 20374 K     | Shaft, 1-3/16" rd. x 35-5/64".                                             | 45       | 16271 K     | Retainer washer spring.                                                                                               |
| 17       | 16647 K     | Countershaft drive belt, 61 x 1-23/64".                                    | 46       | ST 169      | Clamp plate.                                                                                                          |
| 18       | 16989 K     | Pulley (8-3/4" diam.)                                                      | 47       | 20401 K     | Retainer washer.                                                                                                      |
| 19       | 18329 K     | Pulley (10-7/8" diam.) (special).                                          | 48       | .....       | Roller bearing.                                                                                                       |
| 20       | Q 1497      | Pulley (12-1/2" diam.)                                                     | 49       | 2107 K      | Outer race.                                                                                                           |
| 21       | 20376 K     | Key, 3/8 x 3/8 x 2" (gib key).                                             | 50       | 21228 K     | Capscrew, 1/2 x 4-5/8" (hex. head, N. F. thread) (with nut).                                                          |
| 22       | .....       | Pulley (6-3/4" diam.)                                                      | 51       | 2106 K      | Pulley disc, outer.                                                                                                   |
| 23       | M 6286      | Capscrew, 5/16 x 3/4".                                                     | 52       | 2105 K      | Spacer, 7/8" rd. x 2-15/16".                                                                                          |
| 24       | 16184 K     | Bearing box cap.                                                           | 53       | .....       | Pulley disc, center.                                                                                                  |
| 25       | ST 213      | Sleeve.                                                                    | 54       | .....       | Cap, right.                                                                                                           |
| 26       | 16178 K     | Ball bearing.                                                              | 55       | 17428 KB    | Capscrew, 3/8 x 3/4".                                                                                                 |
| 27       | .....       | "UN" bolt.                                                                 | 56       | 17426 K     | Pulley supporting strut, complete.                                                                                    |
| 28       | .....       | Flat washer, 21/32 x 1-1/2" x 11 ga.                                       | 57       | 17405 K     | Tightener screw, complete.                                                                                            |
| 29       | 7225 T      | Hex. nut, 5/8", N.C. (Type "C").                                           | 58       | .....       | "L" bolt.                                                                                                             |
|          |             | Cotter, 1/8 x 1-1/4".                                                      |          |             | Flat washer, 15/32 x 1" x 11 ga.                                                                                      |
|          |             | Key, 3/16 x 7/8" (Woodruff No.11).                                         |          |             |                                                                                                                       |



CYLINDER

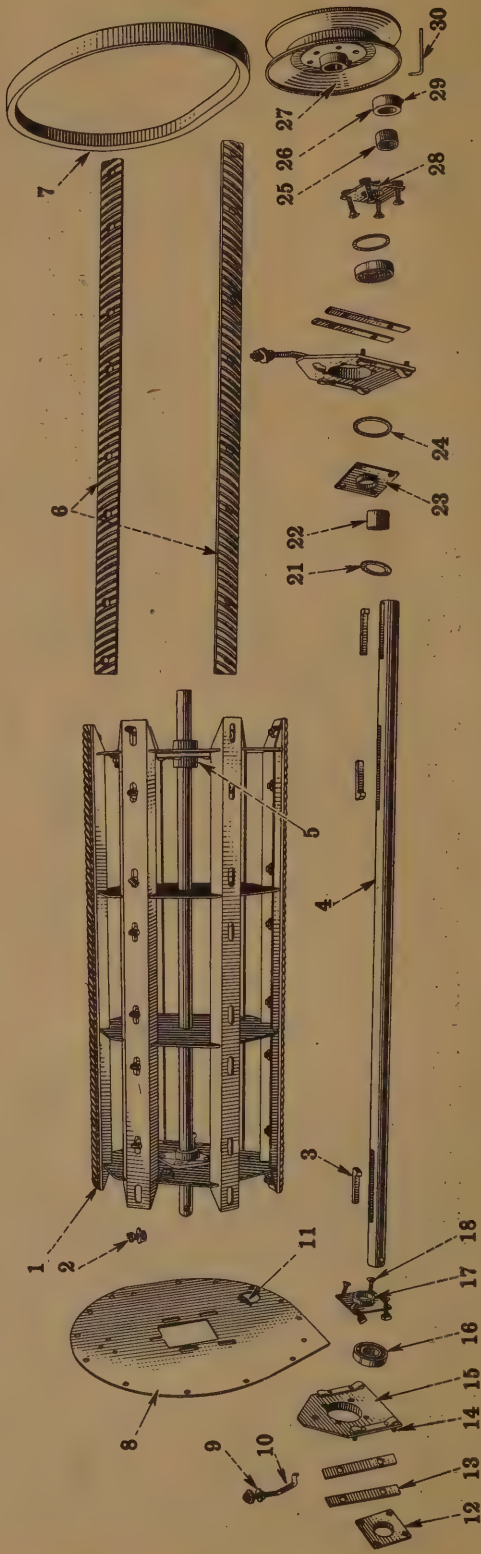
REPLACING DAMAGED CYLINDER BARS

IMPORTANT! When one cylinder bar becomes damaged, the cylinder bar directly across from the one damaged must also be replaced in order to maintain proper balance of the cylinder.

Cylinder bars should be ordered in complete sets, or in pairs as follows:

21903 K Pair of cylinder bars, consisting of one 18680 K bar, left and one 18681 K bar, right. See Ref. No. 6.

18826 K Complete set of cylinder bars, consisting of three 18680 K bar, left and three 18681 K bar, right. See Ref. No. 6.



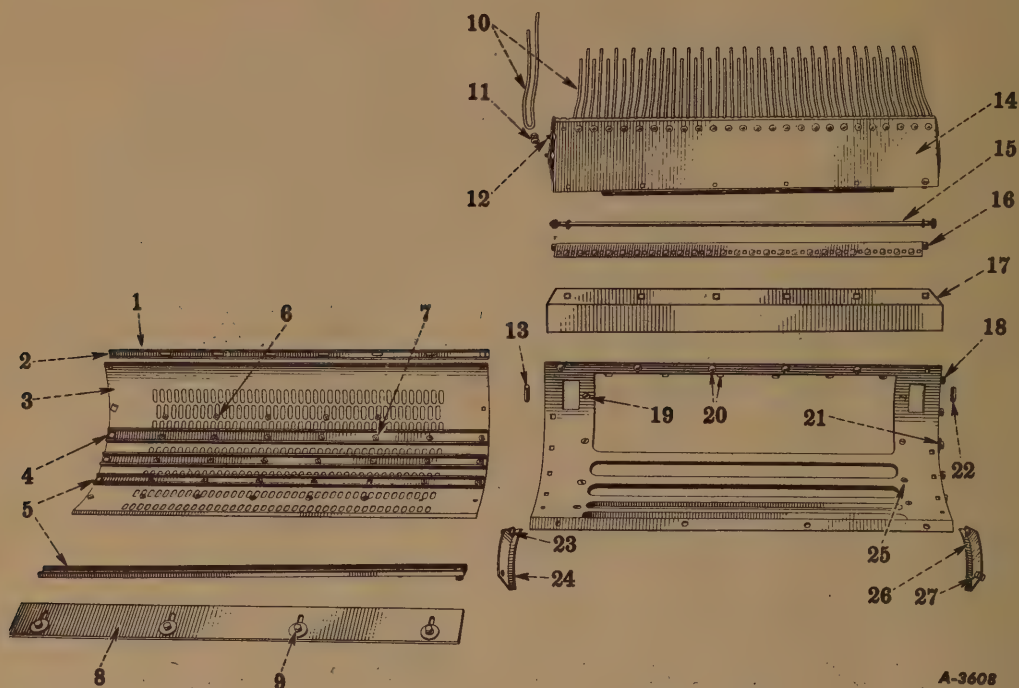
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## CYLINDER - Continued

Index to Reference Numbers shown in illustrations on opposite page.

| Ref. No. | Part Number | Description                                                                           | Ref. No. | Part Number | Description                                |
|----------|-------------|---------------------------------------------------------------------------------------|----------|-------------|--------------------------------------------|
| 1        | 19425 KA    | Cylinder, cp. (includes parts covered by Ref. Nos. 2, 3, 4, 5, 6, 16, 17, 22 and 23). | 12       | 16499 K     | Bearing box cap, outer right.              |
| 2        | MA 90082    | Cylinder bar bolt (with nut and 15/32 x 1-5/8" x 11 ga. washer).                      | 13       | 18603 K     | Bolt hole cover.                           |
| 3        | Q 1497      | Key, 3/8 x 3/8 x 2".                                                                  | 14       | .....       | Carriage bolt, 5/16 x 1-3/8" (with nut).   |
| 4        | 16194 KB    | Cylinder shaft, 1-3/16" rd. x 48".                                                    | 15       | 18672 K     | Bearing box.                               |
| 5        | 1794 K      | Hub.                                                                                  | 16       | ST 213      | Bearing.                                   |
|          | 21903 K.    | Pair of cylinder bars (one 18680 K bar, left and one 18681 K bar, right).             | 17       | 16502 K     | Bearing box cap, inner right.              |
| 6        | 18826 K     | Complete set of cylinder bars (three 18680 K bar, left and three 18681 K bar, right). | 18       | .....       | Carriage bolt, 5/16 x 1-3/8" (with nut).   |
| 7        | 16647 K     | Cylinder drive belt, 61 x 1-23/64".                                                   | 21       | .....       | Washer, 1-9/32 x 2" x 16 ga.               |
| 8        | 15836 K     | Cylinder end cover.                                                                   | 22       | 18623 K     | Spacer, inner.                             |
| 9        | .....       | Washer, 13/32 x 1" x 11 ga.                                                           | 23       | 16503 K     | Bearing box cap, inner left.               |
| 10       | 18619 K     | Adjusting bolt.                                                                       | 24       | 16504 K     | Bearing race spacer.                       |
| 11       | 18217 K     | Observation door.                                                                     | 25       | 17502 KA    | Bearing spacer.                            |
|          |             |                                                                                       | 26       | 16242 K     | Collar.                                    |
|          |             |                                                                                       | 27       | 16989 K     | Sheave (8-3/4" diam.).                     |
|          |             |                                                                                       | 28       | 16244 K     | Bearing box cap, outer left.               |
|          |             |                                                                                       | 29       | .....       | Hollow head set screw, 5/16 x 3/8".        |
|          |             |                                                                                       | 30       | 19445 K     | Socket wrench (for hollow head set screw). |

## CONCAVE

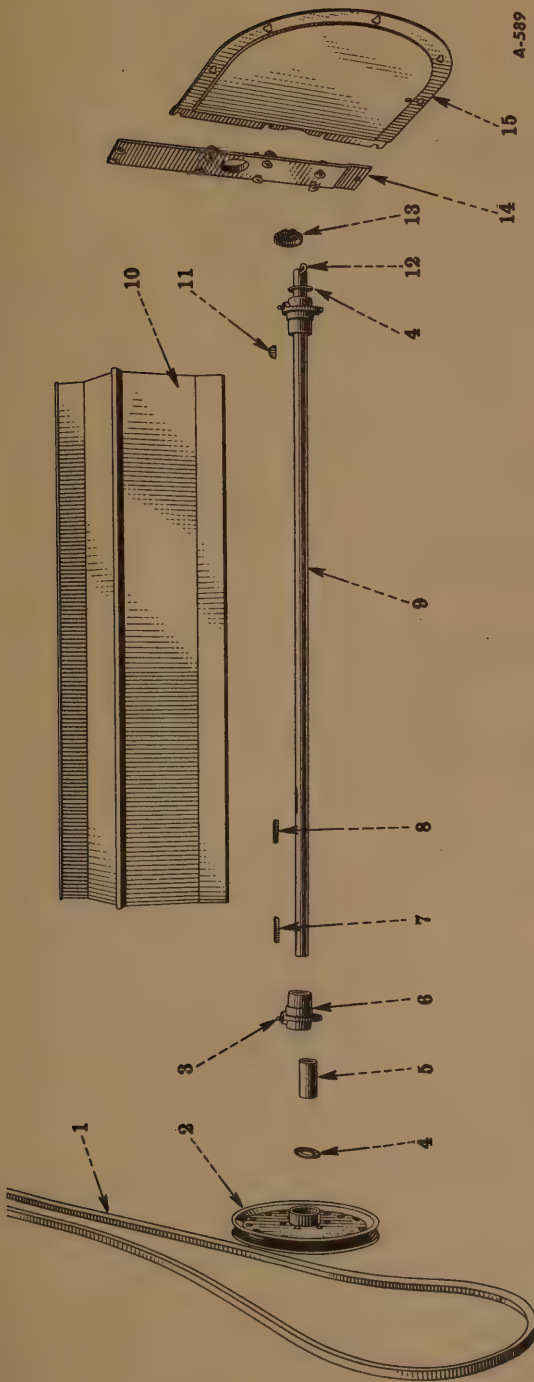


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| Ref. No. | Part Number | Description                                                                      | Ref. No. | Part Number | Description                                     |
|----------|-------------|----------------------------------------------------------------------------------|----------|-------------|-------------------------------------------------|
| 1        | 16435 K     | Concave grate, cp.<br>(includes parts covered by Ref. Nos. 2, 3, 4, 5, 6 and 7). | 12       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).          |
| 2        | 18683 K     | Concave bar<br>(1 required).                                                     | 13       | U 13039     | Spacer pipe, 1/4 x 1".                          |
| 3        | 17139 K     | Grate (1/4 x 1" slots).                                                          | 14       | 16298 K     | Concave rear extension.                         |
| 4        | .....       | Machine bolt, 5/16 x 3/4" (with nut).                                            | 15       | 16179 K     | Rod, 7/16" rd. x 37-1/2".                       |
| 5        | 18684 K     | Concave bar<br>(4 required).                                                     | 16       | 16379 K     | Grate finger clamp.                             |
| 6        | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                                  | 17       | 38269 K     | Concave bottom stiffener.                       |
|          | .....       | Washer, 9/32 x 5/8" x 16 ga.                                                     | 18       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).          |
| 7        | .....       | Round slotted head bolt, 1/4 x 9/16" (with nut).                                 | 19       | .....       | Flat slotted head bolt, 5/16 x 5/8" (with nut). |
| 8        | 18682 K     | Feed plate.                                                                      | 20       | .....       | Carriage bolt, 5/16 x 1/2" (with nut).          |
| 9        | .....       | Cap screw, 5/16 x 1-1/4" (with nut).                                             | 21       | .....       | Washer, 13/32 x 1-1/2" x 16 ga.                 |
|          | .....       | Washer, 11/32 x 1-1/4" x 16 ga.                                                  | 22       | M 76001     | Spacer pipe, 1/4 x 2-1/4".                      |
| 10       | 20370 K     | Grate finger.                                                                    | 23       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).          |
| 11       | .....       | Carriage bolt, 5/16 x 3/4" (with nut).                                           | 24       | 18617 K     | End shield, right.                              |
|          |             |                                                                                  | 25       | 17360 K     | Concave bottom.                                 |
|          |             |                                                                                  | 26       | 18616 K     | End shield, left.                               |
|          |             |                                                                                  | 27       | .....       | Machine bolt, 5/16 x 5/8" (with nut).           |

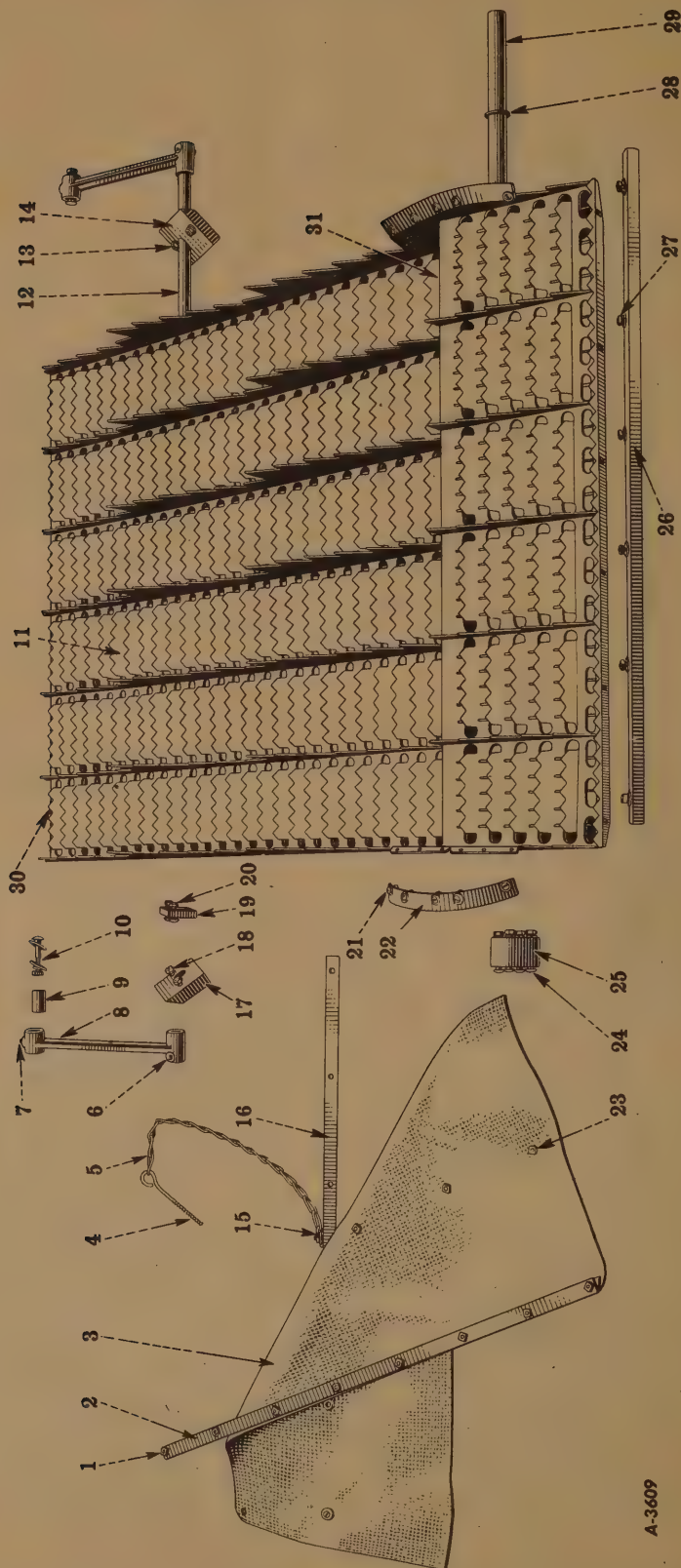


## CYLINDER BEATER



| Ref. No. | Part Number | Description                                                | Ref. No. | Part Number | Description                                       |
|----------|-------------|------------------------------------------------------------|----------|-------------|---------------------------------------------------|
| 1        | 16648 K     | Beater drive belt, 179-1/2 x 5/8" ("BB" Section "V" belt). | 8        | Q 475       | Key, 1/4 x 1/4 x 1-1/2" (in cylinder beater hub). |
| 2        | 16391 K     | Beater drive sheave (with 1797 K hub).                     | 9        | 38743 K     | Shaft, 7/8" rd. x 42-3/4".                        |
| 3        | Q 3851      | Lubrication fitting, 1/4", straight.                       | 10       | 16392 K     | Cylinder beater.                                  |
| 4        | 21927 K     | Washer, 29/32 x 1-5/8" x 16 ga.                            | 11       | 112 139     | Key, (Woodruff "A") (in cylinder beater hub).     |
| 5        | 18524 K     | Beater bearing box bushing.                                | 12       | .....       | Cotter, 1/4 x 1-1/4".                             |
| 6        | 1800 KA     | Beater bearing box.                                        | 13       | 16289 K     | Beater shaft collar.                              |
| 7        | Q 3703      | Key, 1/4x1/4x1-3/4" (in 1797 K).                           | 14       | 17394 K     | Bearing box bracket.                              |
|          |             |                                                            | 15       | 22510 K     | Door.                                             |

STRAW RACK AND CHECK FLAP



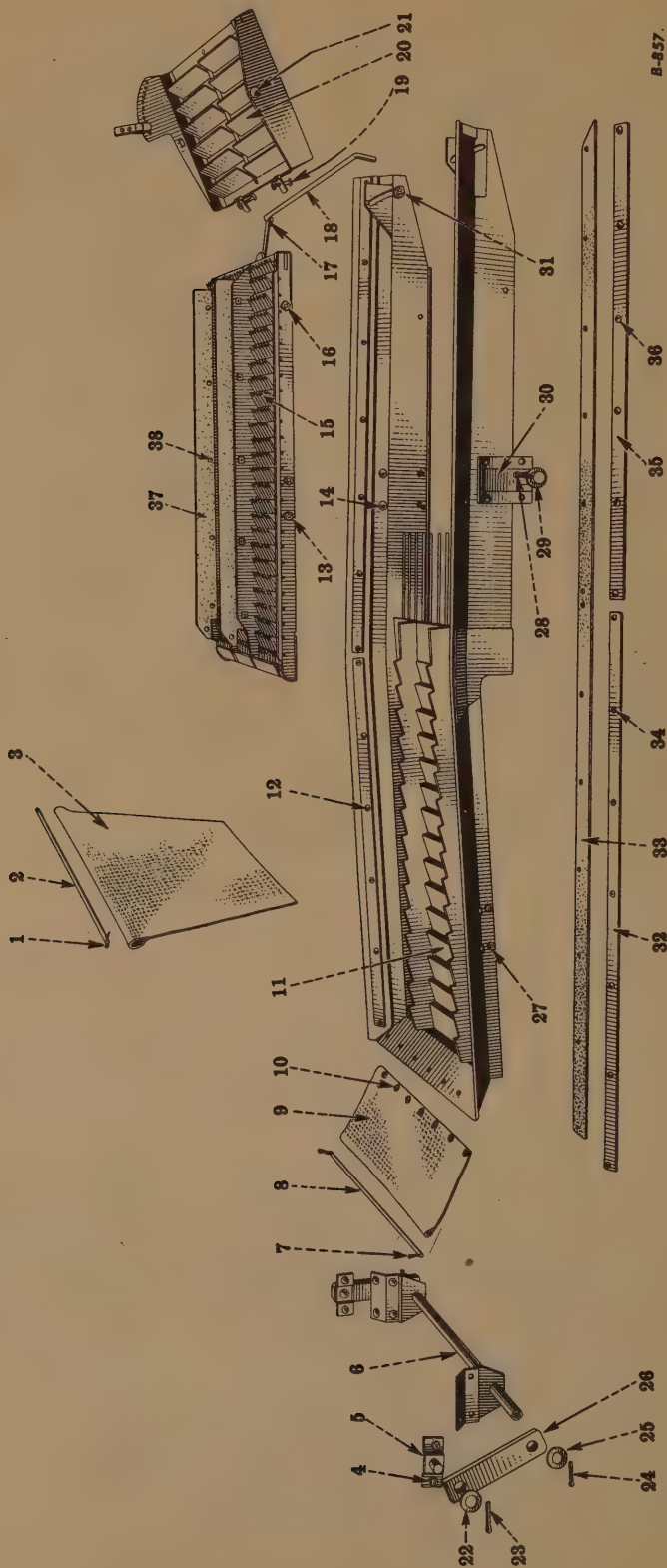
## STRAW RACK AND CHECK FLAP - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                     | Ref. No. | Part Number | Description                                                                                |
|----------|-------------|-------------------------------------------------|----------|-------------|--------------------------------------------------------------------------------------------|
| 1        | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut). | 17       | 16348 K     | Bearing, rear, outer right.                                                                |
| 2        | 16302 K     | Stiffener strap.                                | 18       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut and 11/32 x 3/4" x 16 ga. washer).                  |
| 3        | 19483 K     | Check flat with stiffener.                      | 19       | 16859 KA    | Bearing, center rear.                                                                      |
| 4        | H 59564     | Adjusting pin.                                  | 20       | .....       | Carriage bolt, 5/16 x 1" (with nut and 11/32 x 3/4" x 16 ga. washer).                      |
| 5        | H 59561     | Adjusting chain.                                |          |             |                                                                                            |
| 6        | .....       | Carriage bolt, 5/16 x 1-5/8" (with nut).        | 21       | {           | Round slotted head bolt, 1/4 x 1/2" (with nut).                                            |
| 7        | Q 3851      | Lubrication fitting, 1/4", straight).           | 22       | 18428 K     | Flat washer, 9/32 x 5/8" x 16 ga.                                                          |
| 8        | 1931 K      | Rear hanger.                                    | 23       | Q 3581      | Seal strap (belting).                                                                      |
| 9        | 17001 K     | Bushing (for 1931 K).                           | 24       | .....       | Tubular rivet, .145 x 5/16".                                                               |
| 10       | {           | Carriage bolt, 3/8 x 2-1/4" (with nut).         | 25       | 16346 K     | Carriage bolt, 5/16 x 2-1/8" (with nut).                                                   |
|          | .....       | Flat washer, 13/32 x 1-1/4" x 16 ga.            | 26       | 16316 K     | Bearing, front.                                                                            |
|          | .....       | Flat washer, 17/32 x 1-1/4" x 16 ga.            |          |             | Grain deflector (special) (see page 70, item 5 under "Loss of grain over the straw racks". |
| 11       | 16860 KA    | Straw rack.                                     | 27       | {           | Round slotted head bolt, 1/4 x 1/2" (with nut).                                            |
| 12       | 16340 KA    | Support pipe, rear (.840" O.D. x 39-9/16").     | 28       | .....       | Flat washer, 9/32 x 5/8" x 16 ga.                                                          |
| 13       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut).        |          |             | Flat washer, 1-5/32 x 1-3/4" x 16 ga.                                                      |
| 14       | 16347 K     | Bearing, rear, outer left.                      | 29       | 16341 KA    | Support pipe, front.                                                                       |
| 15       | {           | Flat washer, 5/16 x 3/4" x 16 ga.               | 30       | 16352 K     | Riser rod, rear.                                                                           |
|          | .....       | Round slotted head bolt, 1/4 x 5/8" (with nut). | 31       | 16353 K     | Riser rod, front.                                                                          |
| 16       | 21555 K     | Stiffener, lower.                               |          |             |                                                                                            |



GRAIN PAN AND CHAFFER



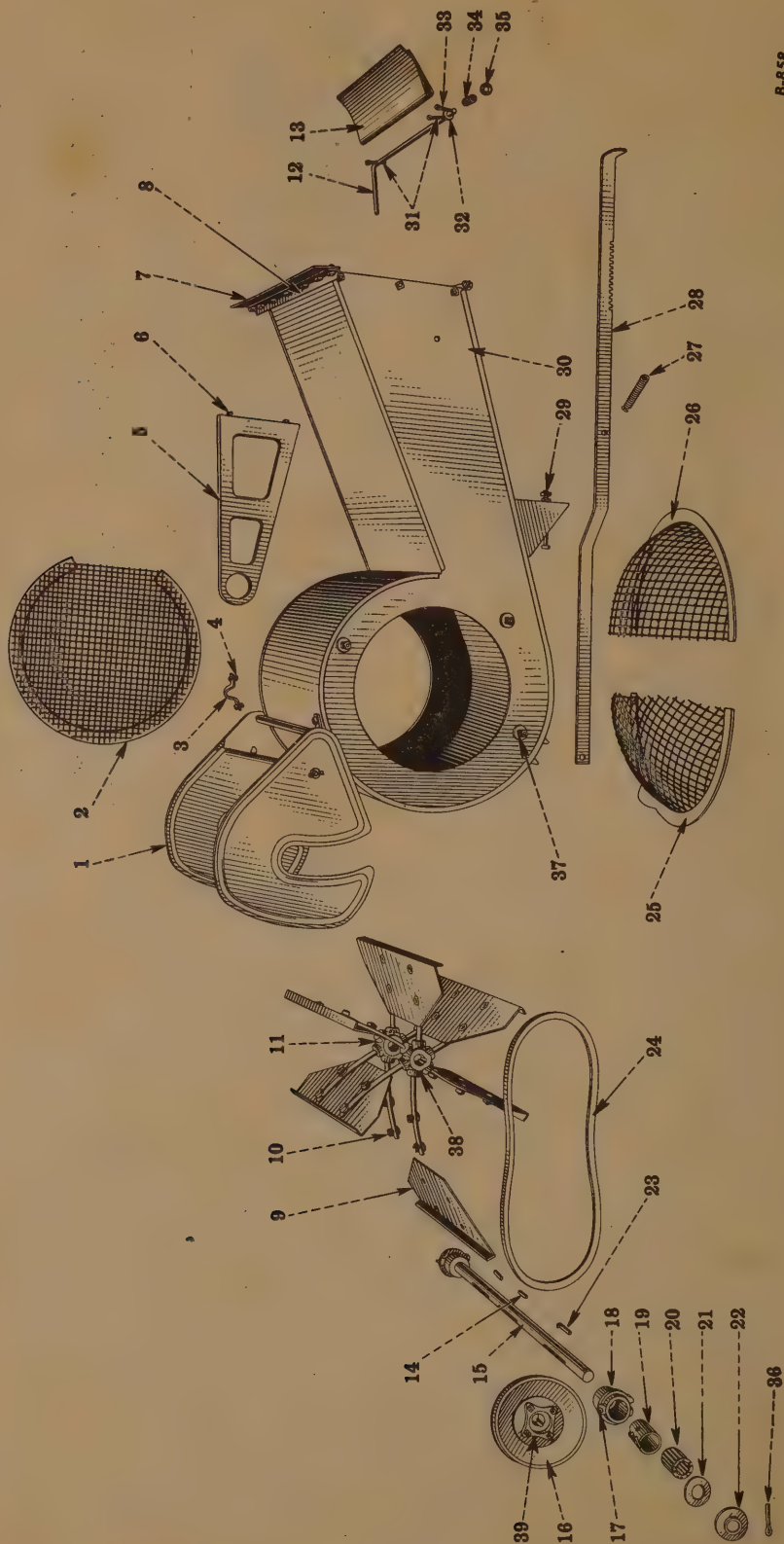
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## GRAIN PAN AND CHAFFER - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                     | Ref. No. | Part Number | Description                                                               |
|----------|-------------|-------------------------------------------------|----------|-------------|---------------------------------------------------------------------------|
| 1        | .....       | Cotter, 1/8 x 5/8".                             | 20       | 17368 KA    | Chaffer extension, cp.                                                    |
| 2        | 16240 K     | Rod, 5/16" rd. x 37".                           | 21       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                    |
| 3        | 16986 K     | Grain check canvas.                             | 22       | .....       | Flat washer, 25/32 x 1-1/2" x 16 ga.                                      |
| 4        | M 76024     | Carriage bolt, 5/16 x 5/8" (with nut).          | 23       | .....       | Cotter, 3/16 x 1-1/8".                                                    |
| 5        | 16511 K     | Hanger bracket, front with stud, complete.      | 24       | .....       | Cotter, 3/16 x 1-3/8".                                                    |
| 6        | 16370 K     | Hanger, complete.                               | 25       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                      |
| 7        | .....       | Cotter, 1/8 x 3/4".                             | 26       | 17033 K     | Hanger (wood).                                                            |
| 8        | 17000 K     | Rod, 5/16" rd. x 29".                           | 27       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                    |
| 9        | 17244 KA    | Canvas.                                         | 28       | .....       | Cotter, 3/16 x 1-1/4".                                                    |
| 10       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut). | 29       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                      |
| 11       | .....       | Flat washer, 5/16 x 3/4" x 16 ga.               | 30       | 17129 K     | Stud plate, cp. with stud.                                                |
| 12       | 17131 KA    | Grain pan and chaffer sides, cp.                | 31       | .....       | Carriage bolt, 5/16 x 5/8" (with nut and 15/32 x 15/16" x 16 ga. washer). |
| 13       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut). | 32       | 17017 K     | Seal strap, front.                                                        |
| 14       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut).        | 33       | 17039 K     | Seal (rubber belting).                                                    |
| 15       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).          | 34       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                           |
| 16       | 19399 K     | Adjustable chaffer sieve, cp.                   | 35       | 17348 K     | Seal strap, rear.                                                         |
| 17       | .....       | Carriage bolt, 5/16 x 1-1/8" (with nut).        | 36       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                           |
| 18       | .....       | Cotter, 1/8 x 3/4".                             | 37       | 19397 K     | Grain divider.                                                            |
| 19       | MA 81026    | Adjusting rod.                                  | 38       | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                           |
|          | .....       | Carriage bolt, 1/4 x 1-3/8" (with nut).         |          |             |                                                                           |

## CLEANING FAN



B-858

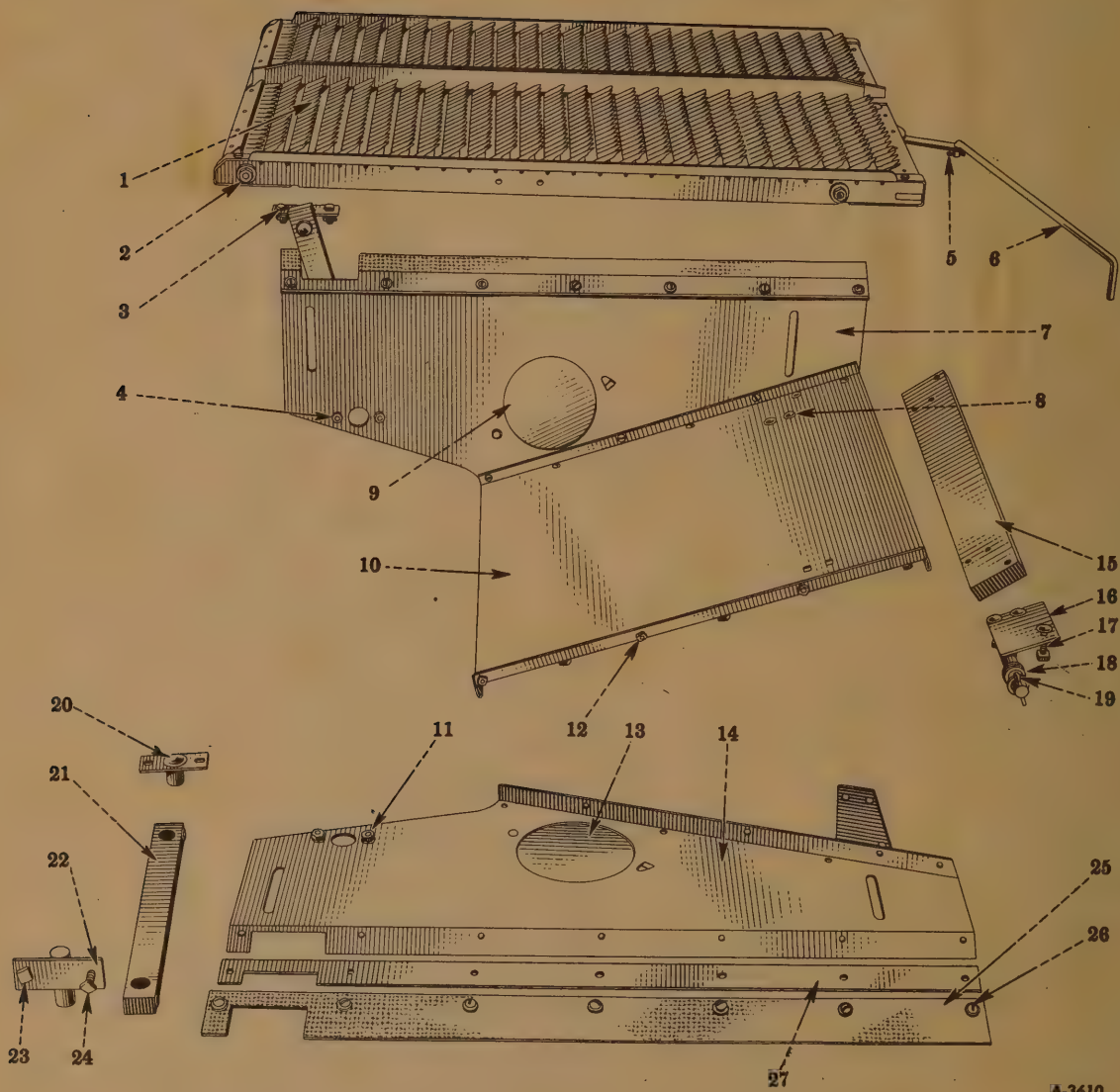


## GRAIN TANK ATTACHMENT - Continued

*Index to Reference Numbers shown in Illustration on opposite page.*

| Ref.<br>No. | Part<br>Number | Description                                        |
|-------------|----------------|----------------------------------------------------|
| 1           | 38 618 K       | Delivery auger trough, complete.                   |
| 2           | 48 072 K       | Elevator head connection side, right, complete.    |
| 3           | Q 3 851        | Lubrication fitting, 1/4", straight.               |
| 4           | 103 420        | Cotter, 1/4 x 1-1/2".                              |
| 5           | 13 540 R11     | Machine bolt, 5/16 x 4-3/4" (with nut).            |
| 6           | Q 399          | Washer, 11/32 x 1" x 16 ga.                        |
| 7           | 7 235 T        | Key, 1/4 x 7/8" (Woodruff "A").                    |
| 8           | 38 595 K       | Pulley.                                            |
| 9           | M 3 388        | Step washer.                                       |
| 10          | 21 868 V       | Washer, 29/32 x 1-1/2" x 16 ga.                    |
| 11          | 1 780 KA       | Bearing, left.                                     |
| 12          | 38 636 K       | Worm and shaft, complete.                          |
| 13          | 1 800 KA       | Bearing, right.                                    |
| 14          | 15 008 R11     | Carriage bolt, 3/8 x 1" (with nut).                |
| 15          | 552 162 R1     | Grain tank inner stiffener 5/16 x 31-1/2".         |
| 16          | 13 001 R1      | Hex Nut, 5/16-18 NC.                               |
| 17          | 552 157 R1     | Grain tank inner stiffener rod.                    |
| 18          | 15 007 R11     | Carriage bolt, 5/16 x 1" (with nut).               |
| 19          | 15 038 R11     | Carriage bolt, 3/8 x 1-1/4" (with nut).            |
| 20          | 552 168 R91    | Grain tank post, right, complete.                  |
| 21          | 552 183 R91    | Grain tank, complete.                              |
| 22          | 552 165 R91    | Grain tank post, left, complete.                   |
| 23          | 13 271 R11     | Machine bolt, 7/16 x 1-1/4" (with nut).            |
| 24          | 552 163 R1     | Grain tank post brace.                             |
| 25          | 13 468 R11     | Machine bolt, 3/8 x 3-3/4" (with nut).             |
| 26          | 13 508 R11     | Machine bolt, 7/16 x 4-1/4" (with nut).            |
| 27          | 16 209 K       | Clamp plate.                                       |
| 28          | 13 254 R11     | Machine bolt, 5/16 x 1" (with nut).                |
| 29          | { 552 159 R1   | Grain tank brace lower, left.                      |
|             | { 552 160 R1   | Grain tank brace lower, right.                     |
| 30          | 13 254 R11     | Machine bolt, 5/16 x 1" (with nut).                |
| 31          | 17 818 K       | Boot Retainer.                                     |
| 32          | 13 244 R11     | Machine bolt, 5/16 x 3/4" (with nut).              |
| 33          | 16 209 K       | Clamp plate.                                       |
| 34          | 13 508 R11     | Machine bolt, 7/16 x 4-1/4" (with nut).            |
| 35          | 552 158 R1     | Stiffener rod space, lower, 3/8" pipe x 29-13/16". |
| 36          | 15 257 R11     | Machine bolt, 1/2 x 1" (with nut).                 |
| 37          | 105 606        | Square nut, 3/8"-16 NC.                            |
| 38          | 16 664 R11     | Stiffener bolt, lower, 3/8" rd. x 31-1/2".         |
| 39          | 552 170 R1     | Grain tank center brace pipe.                      |

SHOE



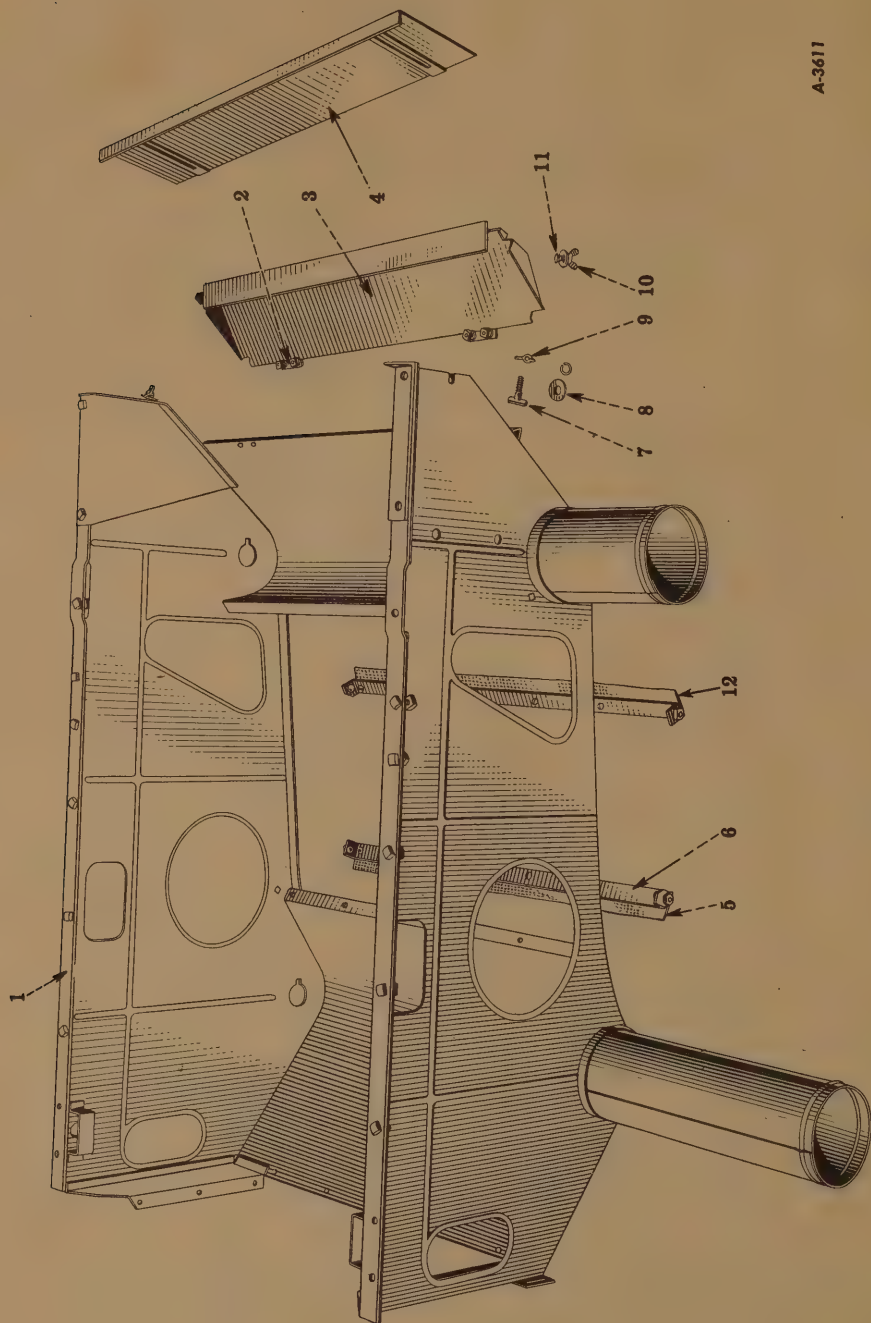
## SHOE - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref.<br>No. | Part<br>Number | Description                                                                        |
|-------------|----------------|------------------------------------------------------------------------------------|
| 1           | 16747 K        | Adjustable shoe sieve.                                                             |
| 2           | {.....         | Carriage bolt, 5/16 x 1-1/4" (with nut).                                           |
| 3           | {.....         | Flat washer, 11/32 x 7/8" x 16 ga.                                                 |
| 4           | .....          | Machine bolt, 5/16 x 3/4" (with nut).                                              |
| 5           | .....          | Carriage bolt, 5/16 x 5/8" (with nut).                                             |
| 6           | .....          | Cotter, 1/8 x 7/8".                                                                |
| 7           | 18268 K        | Rod.                                                                               |
| 8           | 17397 K        | Shoe side, right, complete.                                                        |
| 9           | .....          | Carriage bolt, 5/16 x 1-3/8" (with nut).                                           |
| 10          | 19360 K        | Cover, right.                                                                      |
|             | 17357 K        | Shoe bottom (blank), (see page 54, Illust. 78 for<br>Special shoe bottom screens). |
| 11          | .....          | Carriage bolt, 5/16 x 5/8" (with nut).                                             |
| 12          | .....          | Round slotted head bolt, 1/4 x 3/8" (with nut).                                    |
| 13          | 19361 K        | Cover, left.                                                                       |
| 14          | 17396 K        | Shoe side, left, complete.                                                         |
| 15          | 17034 K        | Rear cross piece.                                                                  |
| 16          | {17126 K       | Bracket, right rear, complete.                                                     |
|             | {17127 K       | Bracket, left, rear, complete.                                                     |
| 17          | .....          | Carriage bolt, 5/16 x 1-3/8" (with nut).                                           |
| 18          | .....          | Flat washer, 21/32 x 1-1/4" x 16 ga.                                               |
| 19          | .....          | Cotter, 3/16 x 1-1/8".                                                             |
| 20          | 17045 KA       | Bracket, lower front, complete.                                                    |
| 21          | 17364 K        | Shoe hanger.                                                                       |
| 22          | 17307 K        | Bracket, upper front, complete.                                                    |
| 23          | .....          | Machine bolt, 5/16 x 3/4" (with nut).                                              |
| 24          | .....          | Machine bolt, 5/16 x 1-1/8" (with nut).                                            |
| 25          | 17306 K        | Seal strap (rubber belting).                                                       |
| 26          | .....          | Round slotted head bolt, 1/4 x 1/2" (with nut).                                    |
| 27          | 19336 K        | Shoe seal strap.                                                                   |



GRAIN AND TAILINGS CONVEYOR TROUGH



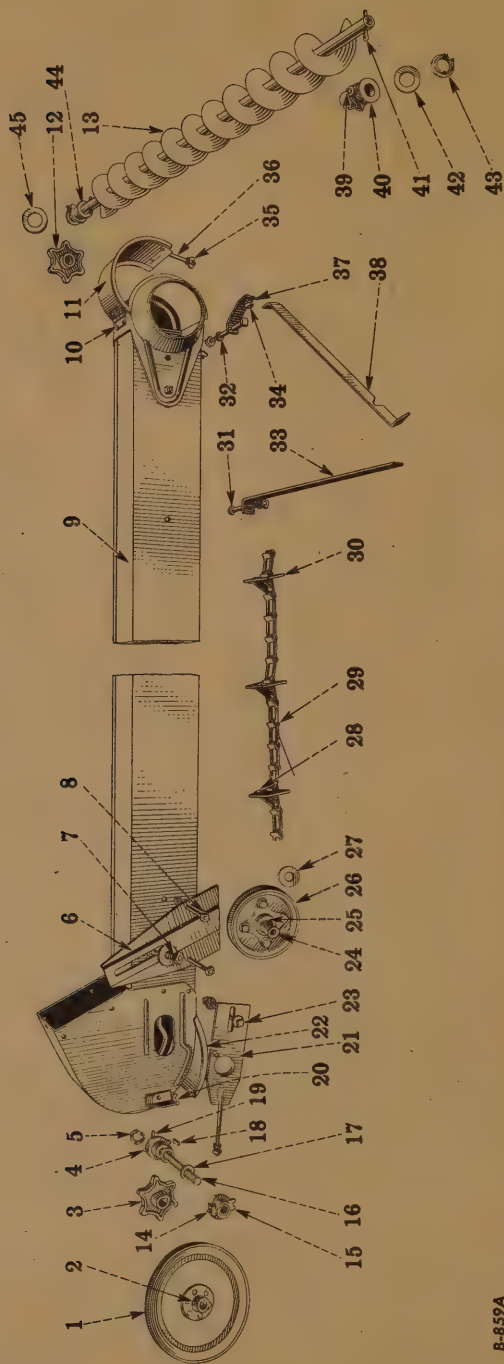
A-3611

## GRAIN AND TAILINGS CONVEYOR TROUGH - Continued

Index to Reference Numbers shown in illustrations on opposite page.

| Ref. No. | Part Number | Description                                     |
|----------|-------------|-------------------------------------------------|
| 1        | 17655 K     | Grain and tailing trough.                       |
| 2        | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut). |
| 3        | 17652 KA    | Conveyor trough door.                           |
| 4        | 17653 KA    | Tail gate.                                      |
| 5        | 22204 K     | Grain conveyor trough seal.                     |
| 6        | 16977 K     | Conveyor trough stiffener.                      |
| 7        | UA 1419     | Tail gate bolt.                                 |
| 8        | .....       | Washer, 11/32 x 7/8" x 16 ga.                   |
| 9        | Q 3505      | Wing nut, 5/16".                                |
| 10       | Q 3504      | Wing nut, 1/4".                                 |
| 11       | { .....     | Carriage bolt, 1/4 x 5/8".                      |
| 12       | { .....     | Washer, 5/16 x 3/4" x 16 ga.                    |
|          | 17651 K     | Tailings conveyor trough shield.                |

CLEAN GRAIN ELEVATOR

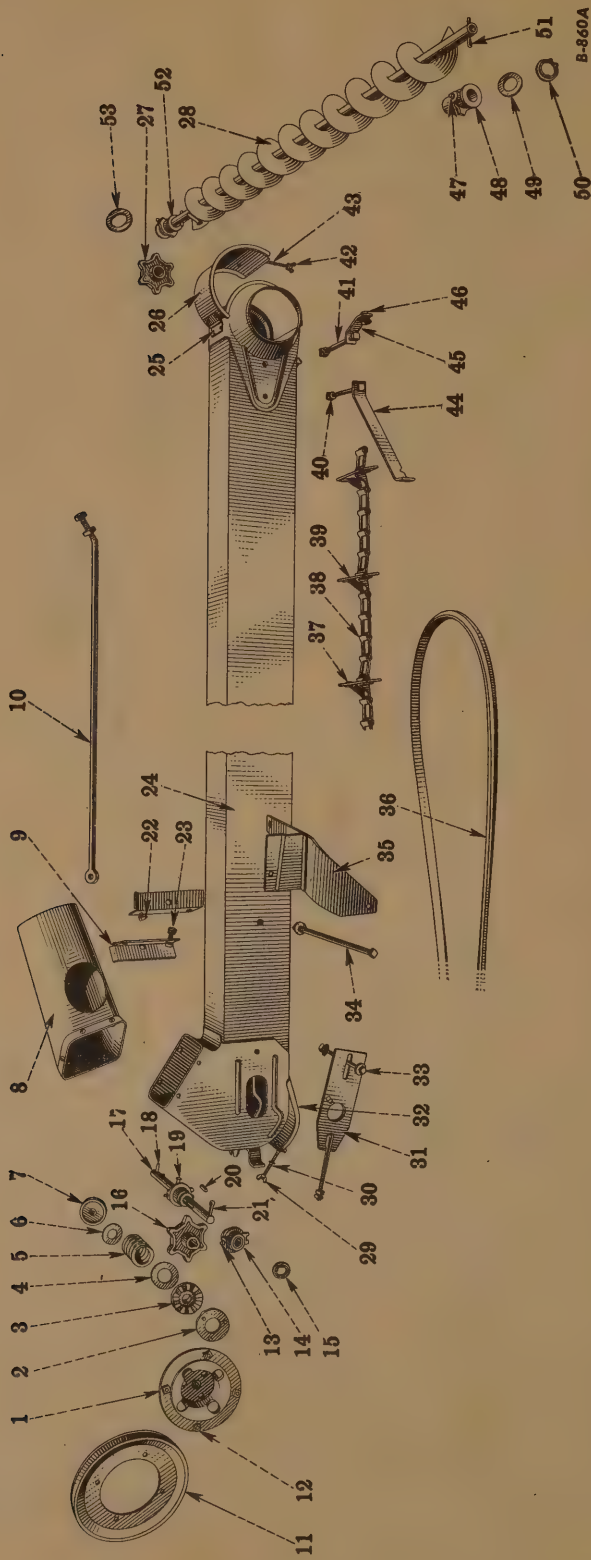


B-859A





TAILINGS ELEVATOR



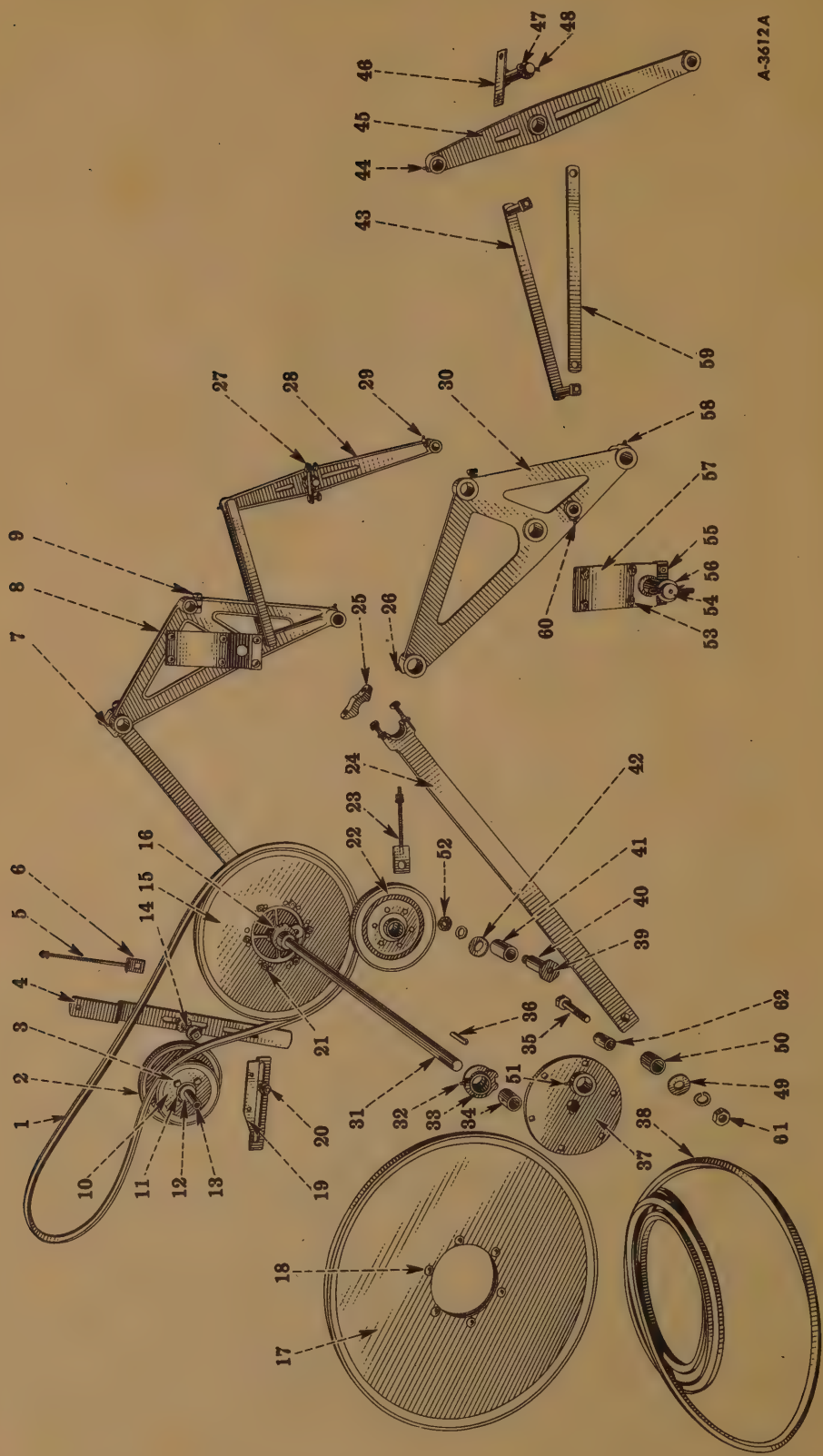
## TAILINGS ELEVATOR - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                  | Ref. No. | Part Number | Description                                                                                                            |
|----------|-------------|----------------------------------------------|----------|-------------|------------------------------------------------------------------------------------------------------------------------|
| 1        | 1788 KA     | Sheave hub.                                  | 33       | .....       | Machine bolt, 5/16 x 4-7/8" (with nut).                                                                                |
| 2        | 12102 L     | Slip clutch ratchet. } 20495 K set           |          |             | Washer, 11/32 x 1" x 16 ga.                                                                                            |
| 3        | 16182 K     | Ratchet hub. } of ratchets.                  |          |             | Machine bolt, 3/8 x 11-3/4" (with nut).                                                                                |
| 4        | M 74104     | Washer, 1-3/4 x 2-3/8" x 16 ga.              | 34       | .....       | Washer, 11/32 x 7/8" x 16 ga.                                                                                          |
| 5        | M 12223     | Spring.                                      |          |             | Elevator support.                                                                                                      |
| 6        | U 11783     | Washer, 29/32 x 2" x 18 ga.                  | 35       | 18139 K     | Elevator drive belt, ("B" section)                                                                                     |
| 7        | 1859 K      | Adjustment nut.                              |          | 18203 K     | (Bagger Machine).                                                                                                      |
| 8        | 17571K      | Elevator spout connection.                   | 36       | 38795 K     | Elevator drive belt, ("BB" section)                                                                                    |
| 9        | 551 372 R91 | Elevator spacer.                             |          |             | (Grain Tank Machine).                                                                                                  |
| 10       | 38917 K     | Elevator front brace.                        | 37       | 17863 K     | Tubular rivet, 7/32 x 7/16".                                                                                           |
| 11       | 16390 K     | Sheave.                                      | 38       | 17568 K     | Elevator conveyor chain, cp. (chain contains 80 - No. 45 plain links and 21 - No. 45SD attachment links with flights). |
| 12       | .....       | Carriage bolt, 5/16 x 3/4" (with nut).       | 39       | 18389 K     | Chain flight with attachment link.                                                                                     |
| 13       | Q 3851      | Lubrication fitting, 1/4", straight.         |          | 25191 K     | Chain flight with attachment link (special) (steel).                                                                   |
| 14       | 1923 K      | Bearing box.                                 | 40       | .....       | Machine bolt, 5/16 x 5" (with nut and two 11/32 x 11/16" x 16 ga. washers).                                            |
| 15       | M 187       | Step washer.                                 |          |             | Machine bolt, 3/8 x 5-1/4" (with nut).                                                                                 |
| 16       | 1787 K      | Sprocket, 6 teeth.                           | 41       | .....       | Wing nut, 1/4".                                                                                                        |
| 17       | 16195 K     | Head shaft, 11/16 x 12-5/32".                | 42       | Q 3504      | Carriage bolt, 1/4 x 3-1/4", 1-1/4" thread (with 9/32 x 5/8" x 16 ga. washer).                                         |
| 18       | .....       | Straight pin, 1/4 x 1-1/8".                  | 43       | .....       | Elevator brace, lower.                                                                                                 |
| 19       | Q 1329      | Headed pin, 1/4 x 1-3/4".                    |          |             | Tie strap.                                                                                                             |
| 20       | Q 1444      | Key.                                         | 44       | 38539 K     | Carriage bolt, 5/16 x 5/8" (with nut).                                                                                 |
| 21       | .....       | Cotter, 1/4 x 1-3/8".                        | 45       | 18559 K     | Lubrication fitting, 1/4", straight.                                                                                   |
| 22       | .....       | Machine bolt, 3/8 x 3/4" (with nut).         | 46       | .....       | Bearing box, right.                                                                                                    |
| 23       | .....       | Machine bolt, 3/8 x 3/4" (with nut).         |          | Q 3851      | Washer, 29/32 x 1-1/2" x 16 ga.                                                                                        |
| 24       | 19136 K     | Tailings elevator, complete.                 | 47       |             | Step washer.                                                                                                           |
| 25       | 16723 K     | Hinge.                                       | 48       | 2120 K      | Cotter, 1/4 x 1-1/2".                                                                                                  |
| 26       | 17566 K     | Elevator boot door.                          | 49       | .....       | Bearing box, left.                                                                                                     |
| 27       | 1843 K      | Sprocket, 6 teeth.                           | 50       | M 3388      | Washer.                                                                                                                |
| 28       | 16376 K     | Conveyor worm.                               | 51       | .....       | Washer.                                                                                                                |
| 29       | Q 3504      | Wing nut, 1/4".                              | 52       | 1780 KA     | Cotter, 1/4 x 1-1/2".                                                                                                  |
| 30       | .....       | Carriage bolt, 1/4 x 3-1/4" (1-1/4" thread). | 53       | 22360 K     | Bearing box, left.                                                                                                     |
| 31       | 16380 KA    | Bearing bracket.                             |          |             | Washer, 7/8 x 1-1/4" x 16 ga.                                                                                          |
| 32       | 18306 K     | Elevator head door.                          |          |             |                                                                                                                        |



SEPARATOR DRIVE



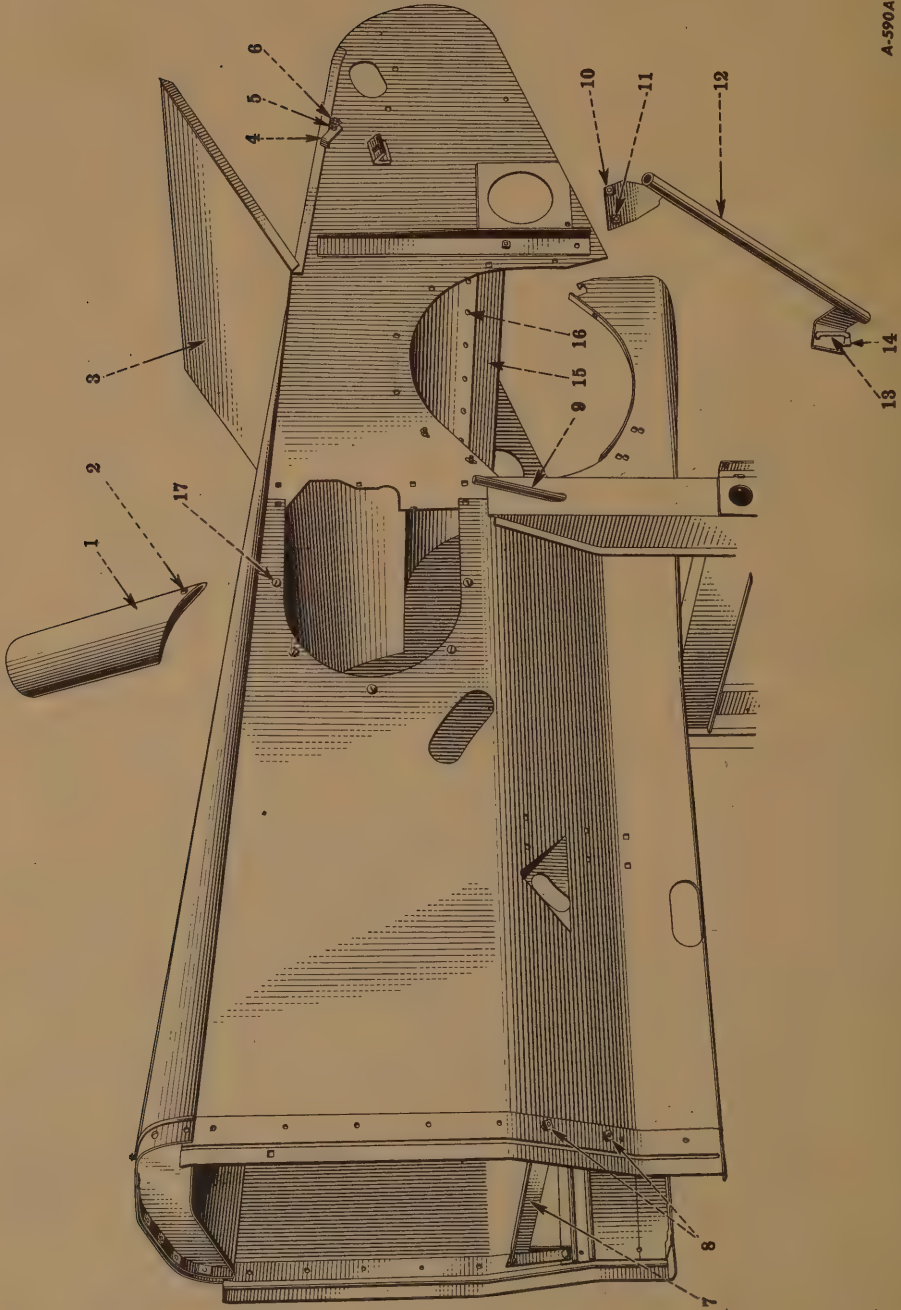
A-3612A

## SEPARATOR DRIVE - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                              | Ref. No. | Part Number | Description                                          |
|----------|-------------|----------------------------------------------------------|----------|-------------|------------------------------------------------------|
| 1        | 16651 K     | "V" belt, 104-3/16 x 5/8" ("BB" Section).                | 30       | 1928 K      | Rocker arm, left.                                    |
| 2        | 38750 K     | Pulley (8-1/8" diam.).                                   | 31       | 16667 K     | Shaft, 7/8" rd. x 42-3/16".                          |
| 3        | .....       | Machine bolt, 5/16 x 3/4" (with nut).                    | 32       | Q 3851      | Lubrication fitting, 1/4", straight.                 |
| 4        | 16219 K     | Tightener bracket.                                       | 33       | 1800 KA     | Box.                                                 |
| 5        | .....       | Machine bolt, 5/16 x 8-1/2" (5-5/8" thread) (with nut).  | 34       | 18524 K     | Oilite bearing.                                      |
| 6        | 17578 K     | Clip.                                                    | 35       | 550 619 R1  | Stud.                                                |
| 7        | Q 3851      | Lubrication fitting, 1/4", straight.                     | 36       | Q 3914      | Gib key, 1/4 x 1/4 x 1-1/2".                         |
| 8        | 1929 K      | Rocker arm, right.                                       | 37       | 1808 KA     | Hub.                                                 |
| 9        | .....       | Carriage bolt, 1/2 x 2" (with nut).                      | 38       | 16648 K     | Separator drive belt, 179-1/2 x 5/8" ("BB" Section). |
| 10       | 18112 KA    | Pulley (6-5/16" diam.).                                  | 39       | Q 3851      | Lubrication fitting, 1/4", straight.                 |
| 11       | 1773 K      | Hub (uses Q 3851 lubrication fitting).                   | 40       | 18637 K     | Stud.                                                |
| 12       | 18521 K     | Oilite bearing.                                          | 41       | 18523 K     | Oilite bearing.                                      |
| 13       | 16668 K     | Sleeve, 7/8" rd. x 2-3/4".                               | 42       | 16247 K     | Washer.                                              |
| 14       | .....       | Carriage bolt, 1/2 x 4" (with nut).                      | 43       | 17128 K     | Strap, inner, cp. with studs.                        |
| 15       | 18115 K     | Flat washer, 17/32 x 1-1/4" x 11 ga.                     | 44       | Q 3851      | Lubrication fitting, 1/4", straight.                 |
| 16       | 1808 KA     | Pulley (15-7/8" diam.).                                  | 45       | 1930 K      | Shoe hanger, rear.                                   |
| 17       | 18114 K     | Pulley (21-1/2" diam.).                                  | 46       | 17366 K     | Bracket, cp. with stud.                              |
| 18       | .....       | Carriage bolt, 5/16 x 1-1/8" (with nut).                 | 47       | .....       | Flat washer, 25/32 x 1-1/4" x 16 ga.                 |
| 19       | 17972 K     | Tightener bracket.                                       | 48       | .....       | Cotter, 3/16 x 1-1/4".                               |
| 20       | { 19409 K   | Carriage bolt, 1/2 x 1-3/8" (with nut).                  | 49       | .....       | Flat washer, 21/32 x 1-1/2" x 11 ga.                 |
| 21       | .....       | Flat washer, 17/32 x 1-1/4" x 11 ga.                     | 50       | 550 621 R1  | Bushing.                                             |
| 22       | .....       | Carriage bolt, 5/16 x 1-1/8" (with nut).                 | 51       | Q 3851      | Lubrication fitting, 1/4" straight.                  |
| 23       | 18067 K     | Pulley, cp. (6-5/8" dia.) (with 18523 K oilite bearing). | 52       | .....       | Hex. nut, 5/8" (type "B" - N.F. 3).                  |
| 24       | 16679 K     | Idle adjusting bolt, cp.                                 | 53       | .....       | Carriage bolt, 5/16 x 3/4" (with nut).               |
| 25       | 551156 R91  | Pitman, cp.                                              | 54       | .....       | Cotter, 1/4 x 1-1/2".                                |
| 26       | Q 3851      | Cap.                                                     | 55       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).               |
| 27       | .....       | Lubrication fitting, 1/4", straight.                     | 56       | .....       | Flat washer, 1-1/32 x 1-1/2" x 16 ga.                |
| 28       | 1930 K      | Shoe hanger, rear.                                       | 57       | 16394 KA    | Bracket, cp. with stud.                              |
| 29       | Q 3853      | Lubrication fitting, 1/4", 67-1/20 elbow.                | 58       | Q 3851      | Lubrication fittings, 1/4" straight.                 |
|          |             |                                                          | 59       | 17091 K     | Strap, outer.                                        |
|          |             |                                                          | 60       | Q 3853      | Lubrication fittings, 1/4". 67-1/20 elbow.           |
|          |             |                                                          | 61       | .....       | Hex. nut, 5/8" (Type "B" - N.F. 3).                  |
|          |             |                                                          | 62       | 550 620 R1  | Sleeve, 7/8" O.D. x 1-25/32".                        |

SEPARATOR SIDES (Right and Left)



A-590A

See page 146 also.

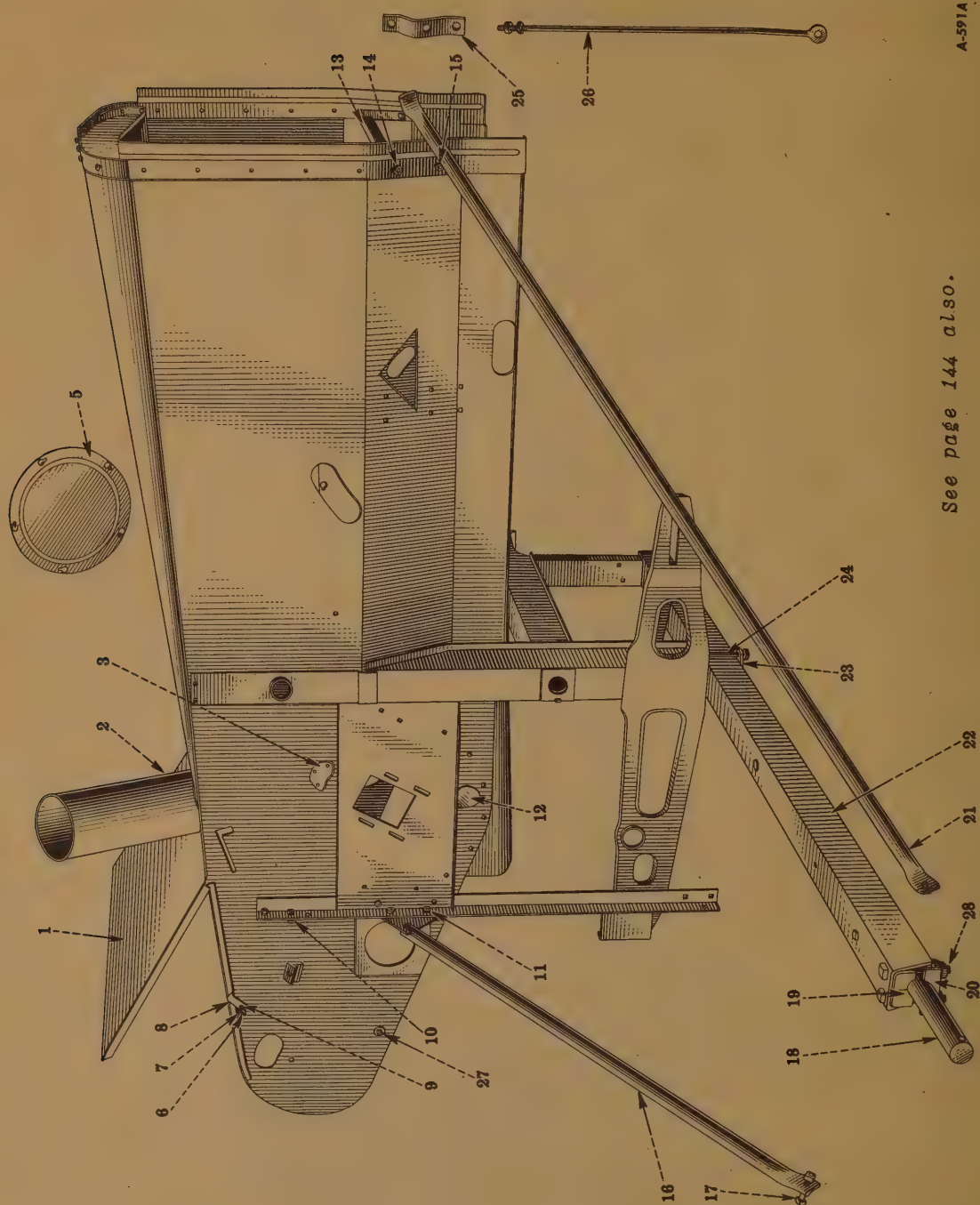


SEPARATOR SIDES (Right and Left)

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                           | Ref. No. | Part Number | Description                                     |
|----------|-------------|---------------------------------------|----------|-------------|-------------------------------------------------|
| 1        | 26881 K     | Spout.                                | 9        | 17715 K     | Cylinder rocking lever.                         |
| 2        | .....       | Carriage bolt, 1/4 x 1/2" (with nut). | 10       | .....       | Machine bolt, 5/16 x 7/8" (with nut).           |
| 3        | 17439 K     | Upper feeder cover.                   | 11       | .....       | Machine bolt, 3/8x1-1/8"(with nut).             |
| 4        | 17330 K     | Clip.                                 | 12       | 18590 KA    | Brace, complete.                                |
| 5        | M 73921     | Spring.                               | 13       | 18144 K     | "U" bolt.                                       |
| 6        | { U 5348    | Pin, 1/4 x 1-1/2".                    | 14       | 18143 K     | Clamp plate.                                    |
| 7        | .....       | Flat washer, 9/32 x 5/8" x 16 ga.     | 15       | 19444 KA    | Cross sheet extension.                          |
| 8        | 18629 K     | Cross brace, cp.                      | 16       | .....       | Round slotted head bolt, 1/4 x 3/8" (with nut). |
|          | .....       | Machine bolt, 5/16 x 1" (with nut).   | 17       | .....       | Round slotted head bolt, 1/4x3/8".              |

SEPARATOR SIDES (Right and Left) - Continued



See page 144 also.

A-591A

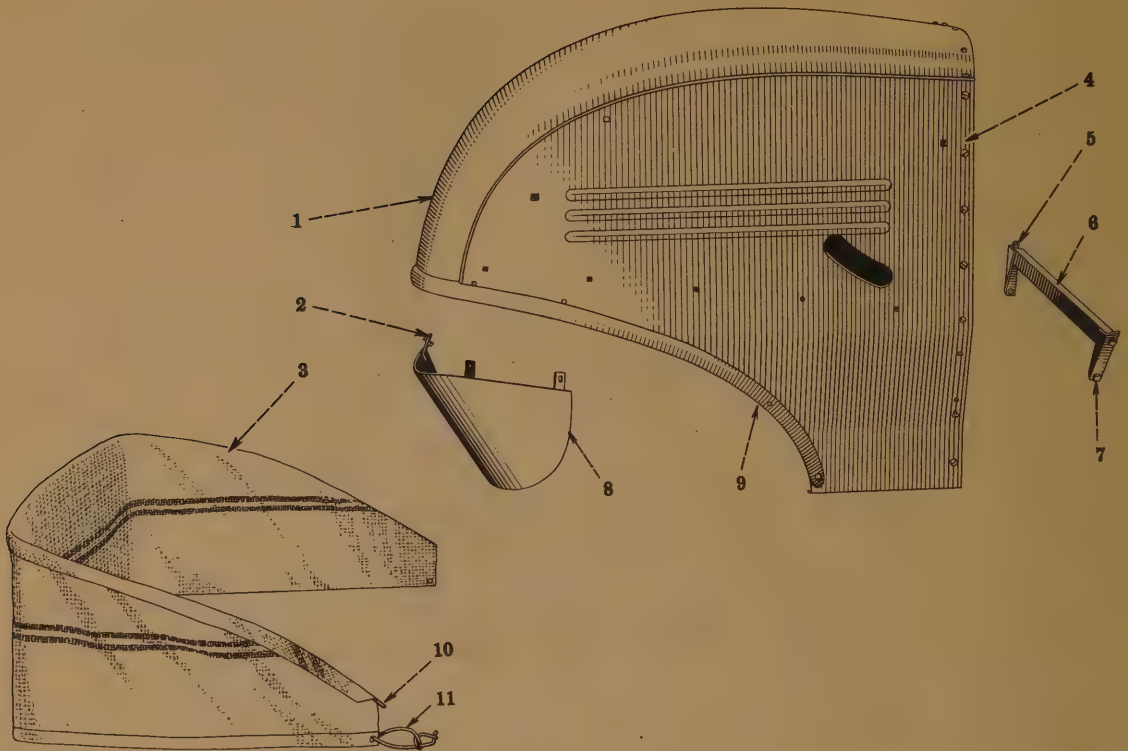
## SEPARATOR SIDES (Right and Left) - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                                                   | Ref. No. | Part Number | Description                                                                       |
|----------|-------------|-------------------------------------------------------------------------------|----------|-------------|-----------------------------------------------------------------------------------|
| 1        | 17439 K     | Upper feeder cover.                                                           | 16       | 18613 K     | Brace, complete.                                                                  |
| 2        | 26881 K     | Spout.                                                                        | 17       | .....       | Machine bolt, 7/16 x 2-1/8" (with nut).                                           |
| 3        | 16251 K     | Adjustment bracket.                                                           | 18       | 18934 KA    | Stub axle, complete.                                                              |
| 5        | 22511 K     | Cover plate.                                                                  | 19       | 1969 K      | Axle clamp block.                                                                 |
| 6        | U 5348      | Pin, 1/4 x 1-1/2".                                                            | 20       | 22356 K     | Clamp plate.                                                                      |
| 7        | .....       | Flat washer, 9/32 x 5/8" x 16 ga.                                             | 21       | 18625 K     | Brace.                                                                            |
| 8        | 17330 K     | Clip.                                                                         | 22       | 17941 KC    | Main axle.                                                                        |
| 9        | M 73921     | Spring.                                                                       | 23       | 16209 K     | Clamp plate.                                                                      |
| 10       | .....       | Carriage bolt, 3/8 x 3/4" (with nut).                                         | 24       | 16239 K     | Tie bolt.                                                                         |
| 11       | .....       | Machine bolt, 5/16 x 7/8" (with nut).                                         | 25       | 19280 K     | Bracket.                                                                          |
| 12       | 18217 K     | Adjustment door.                                                              | 26       | 19279 KA    | Brace.                                                                            |
| 13       | 18629 K     | Cross brace, complete.                                                        | 27       | M 43046     | Spacer pipe, 5/16 x 7/8" (with machine bolt, 11/32 x 1" x 16 ga. washer and nut). |
| 14       | .....       | Machine bolt, 3/8 x 1-1/4" (with nut).                                        |          |             |                                                                                   |
| 15       | .....       | Machine bolt, 5/16 x 1" (with nut and four 11/32 x 1" x 16 ga. flat washers). | 28       | .....       | Machine bolt, 7/16 x 3-7/8" (with nut).                                           |



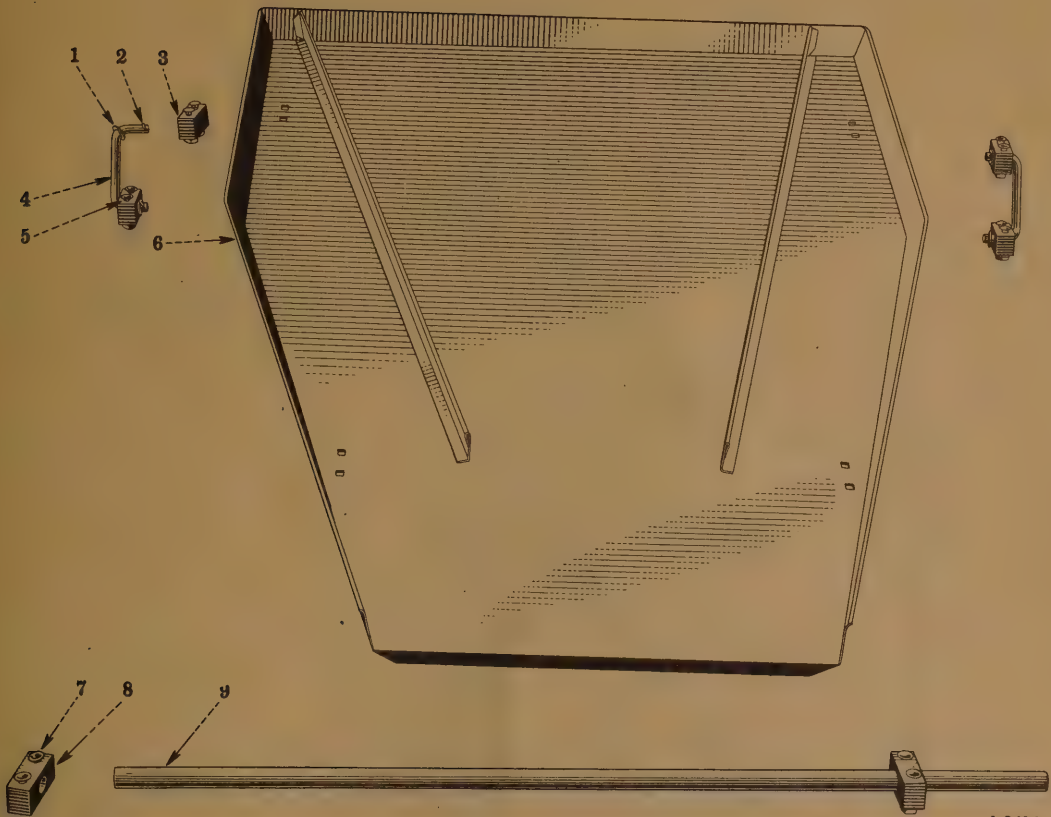
SEPARATOR HOOD AND CANVAS



A-3613A

| Ref. No. | Part Number | Description                                                                     |
|----------|-------------|---------------------------------------------------------------------------------|
| 1        | 38728 K     | Separator hood, complete.                                                       |
| 2        | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                                 |
| 3        | 16360 KA    | Canvas.                                                                         |
| 4        | .....       | Round slotted head bolt, 1/4 x 1/2" (with nut).                                 |
| 5        | .....       | Machine bolt, 3/8 x 1-1/4" (with nut).                                          |
| 6        | 18629 K     | Cross brace, complete.                                                          |
| 7        | .....       | Machine bolt, 5/16 x 1" (with nut).                                             |
| 8        | 17940 K     | Straw deflector, complete.                                                      |
| 9        | .....       | Round slotted head bolt, 1/4 x 5/8" (with nut and 9/32 x 5/8" x 16 ga. washer). |
| 10       | 16257 K     | Rod.                                                                            |
| 11       | 16221 KA    | Bail rod.                                                                       |

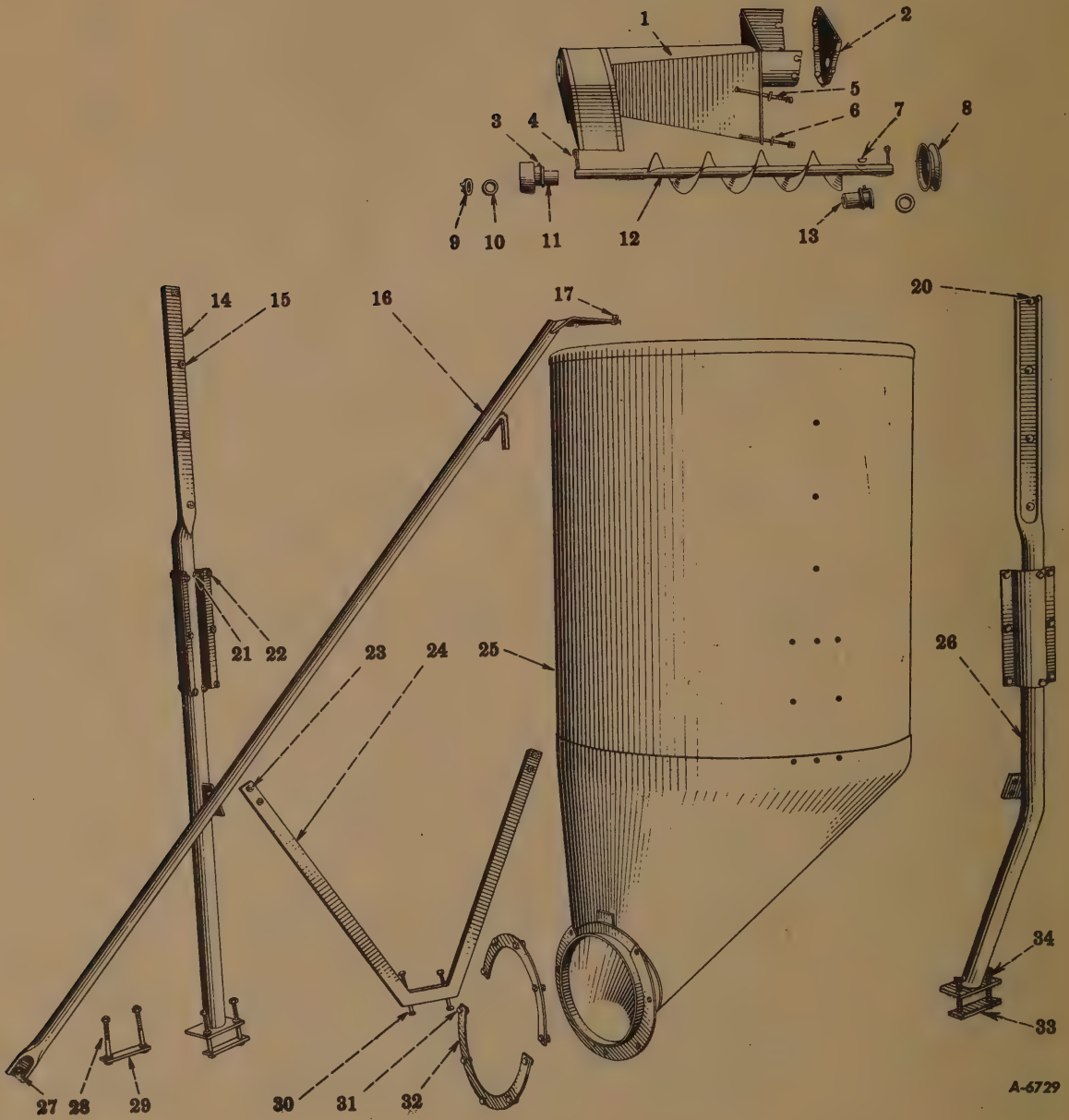
## RETURN PAN



A-3614

| Ref. No. | Part Number | Description                                                                  |
|----------|-------------|------------------------------------------------------------------------------|
| 1        | .....       | Washer, 17/32 x 1" x 16 ga.                                                  |
| 2        | .....       | Cotter, 1/8 x 7/8".                                                          |
| 3        | 16344 K     | Return pan rear bearing.                                                     |
| 4        | 16188 K     | Return pan link.                                                             |
| 5        | .....       | Carriage bolt, 5/16 x 1-3/4" (with nut and 11/32 x 11/16" x 16 ga. washers). |
| 6        | 16748 K     | Return pan.                                                                  |
| 7        | .....       | Carriage bolt, 5/16 x 1-7/8" (with nut and 11/32 x 11/16" x 16 ga. washers). |
| 8        | 16678 K     | Return pan front bearing.                                                    |
| 9        | 16337 K     | Return pan front pipe.                                                       |

GRAIN TANK ATTACHMENT





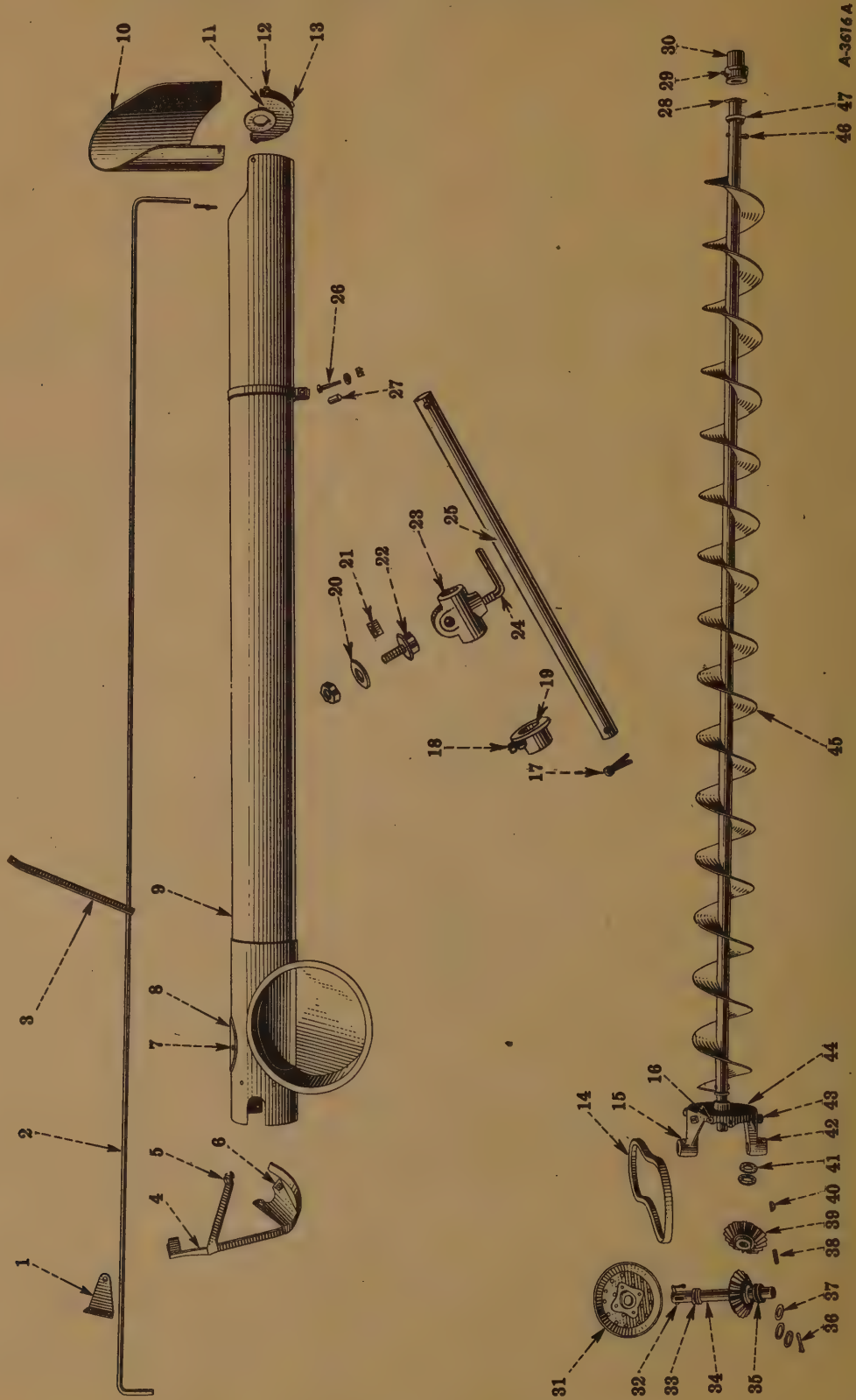
## GRAIN TANK ATTACHMENT - Continued

*Index to Reference Numbers shown in Illustration on opposite page.*

| Ref.<br>No. | Part<br>Number | Description                                     |
|-------------|----------------|-------------------------------------------------|
| 1           | 38618 K        | Delivery auger trough, complete.                |
| 2           | 48072 K        | Elevator head connection side, right, complete. |
| 3           | Q 3851         | Lubrication fitting, 1/4", straight.            |
| 4           | .....          | Cotter, 1/4 x 1-1/2".                           |
| 5           | .....          | Machine bolt, 5/16 x 4-3/4" (with nut).         |
| 6           | .....          | Washer, 11/32 x 1" x 16 ga.                     |
| 7           | 112 139        | Key, 1/4 x 7/8" (Woodruff "A").                 |
| 8           | 38595 K        | Pulley.                                         |
| 9           | M 3388         | Step washer.                                    |
| 10          | .....          | Washer, 29/32 x 1-1/2" x 16 ga.                 |
| 11          | 1780 KA        | Bearing, left.                                  |
| 12          | 38636 K        | Worm and shaft, complete.                       |
| 13          | 1800 KA        | Bearing, right.                                 |
| 14          | 38604 KA       | Grain tank post, right, complete.               |
| 15          | .....          | Carriage bolt, 5/16 x 3/4" (with nut).          |
| 16          | 49545 K        | Grain tank center brace, complete.              |
| 17          | .....          | Carriage bolt, 5/16 x 3/4" (with nut).          |
| 20          | .....          | Carriage bolt, 5/16 x 7/8" (with nut).          |
| 21          | .....          | Machine bolt, 5/16 x 2-1/2" (with nut).         |
| 22          | .....          | Carriage bolt, 5/16 x 5/8" (with nut).          |
| 23          | .....          | Carriage bolt, 3/8 x 3/4" (with nut).           |
| 24          | 38950 K        | Grain tank post brace.                          |
| 25          | 38600 KA       | Grain tank, complete.                           |
| 26          | 48446 KA       | Grain tank post, left, complete.                |
| 27          | .....          | Machine bolt, 1/2 x 1-1/8" (with nut).          |
| 28          | .....          | Machine bolt, 7/16 x 4-1/8" (with nut).         |
| 29          | 16209 K        | Clamp plate.                                    |
| 30          | .....          | Machine bolt, 3/8 x 3-5/8" (with nut).          |
| 31          | .....          | Machine bolt, 5/16 x 3/4" (with nut).           |
| 32          | 17818 K        | Boot retainer.                                  |
| 33          | 16209 K        | Clamp plate.                                    |
| 34          | .....          | Machine bolt, 7/16 x 4-1/4".                    |

Grain Tank Unloader Elevator and Elevator Drive Parts.

GRAIN TANK ATTACHMENT - Continued



## GRAIN TANK ATTACHMENT - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                                                         | Ref. No. | Part Number | Description                                                              |
|----------|-------------|---------------------------------------------------------------------|----------|-------------|--------------------------------------------------------------------------|
| 1        | 18210 K     | ● Bracket.                                                          | 20       | .....       | Washer, 11/32 x 1" x 16 ga.                                              |
| 2        | 48302 K     | ● Bracket (not illustrated).                                        | 21       | M 43046     | Pipe holder pivot.                                                       |
| 3        | 38522 K     | ● Rod.                                                              | 22       | .....       | Machine bolt, 5/16 x 2" (with nut).                                      |
| 4        | 48489 K     | ● Rod (not illustrated).                                            | 23       | 1781 K      | Pipe holder.                                                             |
| 5        | 22538 K     | ● Rod support, center.                                              | 24       | 17787 K     | Lock.                                                                    |
| 6        | 48488 K     | ● Rod support, center (not illustrated).                            | 25       | 49544 K     | Suspension pipe.                                                         |
| 7        | 18197 K     | Belt shield, complete.                                              | 26       | .....       | Machine bolt, 5/16 x 1-5/8" (with nut).                                  |
| 8        | .....       | Machine bolt, 5/16 x 7/8" (with nut).                               | 27       | M 74411     | Pipe pivot.                                                              |
| 9        | .....       | Machine bolt, 5/16 x 1/2" (with nut).                               | 28       | .....       | Flat washer, 1-5/32 x 2" x 16 ga.                                        |
| 10       | .....       | Screw, 1/4 x 1/2" (thread cutting).                                 | 29       | Q 3851      | Lubrication fitting, 1/4", straight.                                     |
| 11       | 17799 K     | Door.                                                               | 30       | 1867 K      | Box.                                                                     |
| 12       | 38535 K     | Elevator casing, cp. (with 17799 K door).                           | 31       | 18545 K     | Pulley (5-7/8" diam.).                                                   |
| 13       | 18671 K     | Unloader tube extension.                                            | 32       | 1380 S      | Pin, 5/16 x 1-49/64".                                                    |
| 14       | 17822 K     | Upper bearing bracket, cp.                                          | 33       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                     |
| 15       | .....       | Machine bolt, 5/16 x 5/8" (with nut).                               | 34       | 18543 K     | Shaft, 7/8" rd. x 9-3/4".                                                |
| 16       | .....       | Machine bolt, 5/16 x 1/2" (with nut).                               | 35       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                     |
| 17       | 18204 K     | Drive belt, 40-3/4" (fractional horsepower "V" belt - "B" Section). | 36       | .....       | Cotter, 1/4 x 1-1/4".                                                    |
| 18       | Q 3851      | Lubrication fitting, 1/4", straight.                                | 37       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                     |
| 19       | 18936 K     | Lubrication fitting, 3/8", straight.                                | 38       | Q 1444      | Key, 1/4 x 1/4 x 7/8" (in 1869 K).                                       |
| 20       | .....       | Cotter, 1/4 x 1-1/2".                                               | 39       | 1869 K      | Gear, 18 teeth.                                                          |
| 21       | MA 3454     | Set screw, 3/8 x 3/4" (cup point). Collar.                          | 40       | 112 139     | Key (Woodruff "A") (in 1869 K).                                          |
| 22       | .....       | .....                                                               | 41       | .....       | Flat washer, 29/32 x 1-1/2" x 16 ga.                                     |
| 23       | .....       | .....                                                               | 42       | Q 3851      | Lubrication fitting, 1/4", straight.                                     |
| 24       | .....       | .....                                                               | 43       | .....       | Machine bolt, 5/16 x 3/4" (with nut and 11/32 x 11/16" x 16 ga. washer). |
| 25       | .....       | .....                                                               | 44       | 1882 K      | Bracket.                                                                 |
| 26       | .....       | .....                                                               | 45       | 16406 KA    | Worm and shaft, complete.                                                |
| 27       | .....       | .....                                                               | 46       | .....       | Cotter, 1/4 x 1-1/2".                                                    |
| 28       | .....       | .....                                                               | 47       | M 311       | Step washer.                                                             |

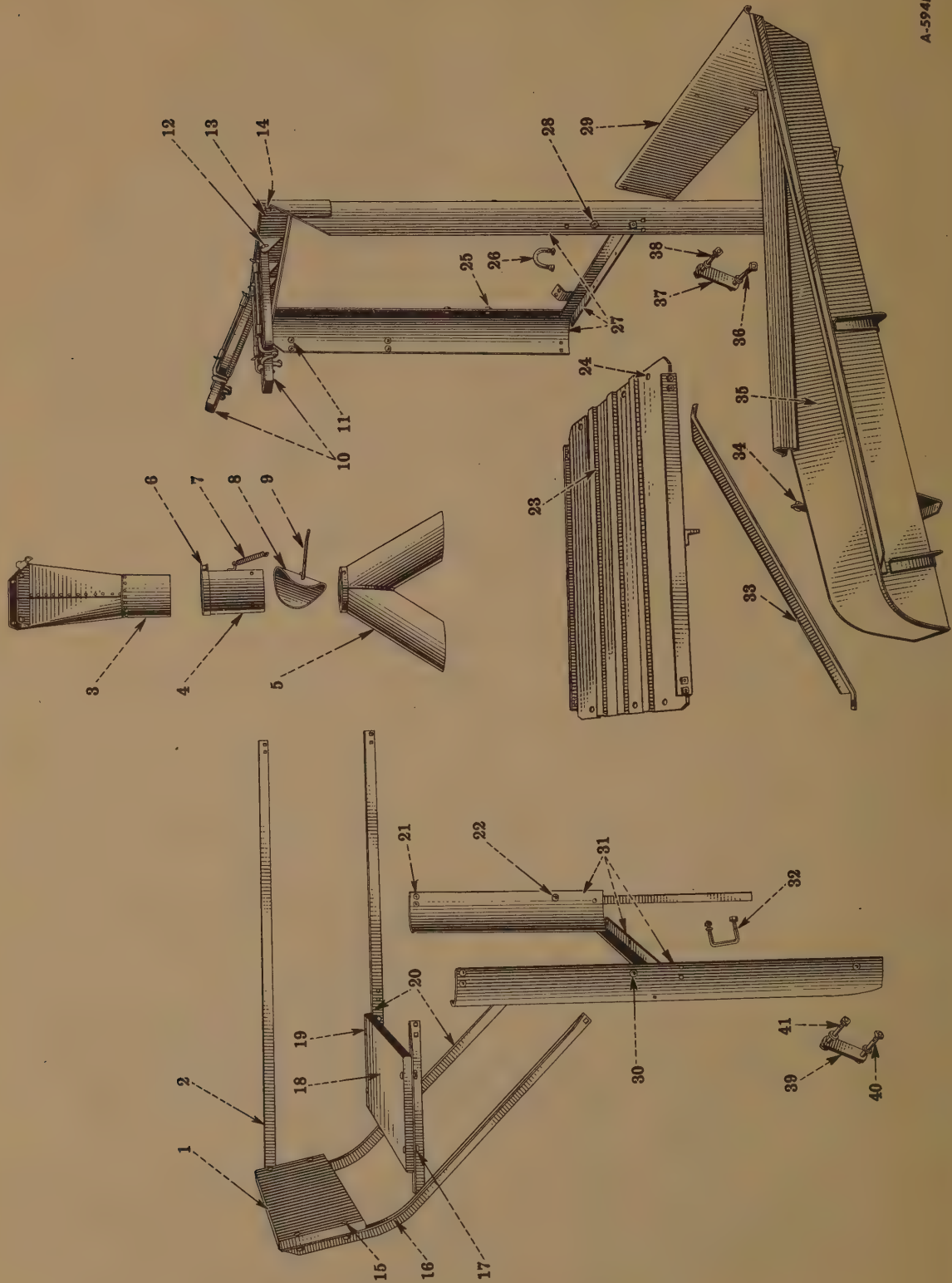
● - For Power Drive Machines.

● - For Engine Drive Machines.



BAGGING ATTACHMENT

Bagging Platform and Supports.



## BAGGING ATTACHMENT - Continued

Index to Reference Numbers shown in illustration on opposite page.

| Ref. No. | Part Number | Description                              | Ref. No. | Part Number | Description                                                                |
|----------|-------------|------------------------------------------|----------|-------------|----------------------------------------------------------------------------|
| 1        | 18370 K     | Seat back.                               | 23       | 49615 K     | Bottom, cp.                                                                |
| 2        | 18348 K     | Front rail.                              | 24       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                     |
| 3        | 18422 K     | Elevator spout, upper.                   | 25       | .....       | Carriage bolt, 5/16 x 1/2" (with nut).                                     |
| 4        | 18423 K     | Elevator spout, lower.                   | 26       | 18344 K     | "J" bolt.                                                                  |
| 5        | 18424 K     | Bag divider spout.                       | 27       | 18383 KA    | Platform side, right.                                                      |
| 6        | .....       | Machine bolt, 5/16 x 3/4" (with nut).    | 28       | .....       | Carriage bolt, 5/16 x 1/2" (with nut).                                     |
| 7        | M 90102     | Spring.                                  | 29       | 18362 K     | Bag shield.                                                                |
| 8        | 18415 K     | Valve.                                   | 30       | .....       | Carriage bolt, 3/8 x 5/8" (with nut).                                      |
| 9        | 18421 K     | Valve handle.                            | 31       | 18382 KA    | Platform side, left.                                                       |
| 10       | 15951 K     | Bag hangers.                             | 32       | 18144 K     | "J" bolt for post, left front.                                             |
| 11       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).   | 33       | 18351 K     | Bottom support brace.                                                      |
| 12       | Q 3527      | Pin, 5/16 x 11/16".                      | 34       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).                                     |
| 13       | 18577 K     | Support rail.                            | 35       | 49612 K     | Bag chute.                                                                 |
| 14       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).   | 36       | .....       | Machine bolt, 7/16 x 4" (with nut).                                        |
| 15       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut). | 37       | 16209 K     | Clamp plate.                                                               |
| 16       | 18378 K     | Seat support, rear.                      | 38       | .....       | Machine bolt, 7/16 x 4" (with nut).                                        |
| 17       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut). | 39       | 19371 K     | Clamp plate.                                                               |
| 18       | 18371 K     | Seat.                                    | 40       | .....       | Machine bolt, 7/16 x 4-1/4" (with nut).                                    |
| 19       | .....       | Carriage bolt, 5/16 x 1-1/4" (with nut). | 41       | .....       | Machine bolt, 7/16 x 5-1/8" (with nut and 15/32 x 15/16" x 16 ga. washer). |
| 20       | 18560 K     | Seat support, front.                     |          |             |                                                                            |
| 21       | .....       | Carriage bolt, 5/16 x 5/8" (with nut).   |          |             |                                                                            |
| 22       | .....       | Carriage bolt, 3/8 x 3/4" (with nut).    |          |             |                                                                            |

SIEVES AND SCREENS

| Part Number | Description        | Dimensions |           | Holes      |           | Remarks                                                                                           | Equipment |
|-------------|--------------------|------------|-----------|------------|-----------|---------------------------------------------------------------------------------------------------|-----------|
|             |                    | Long       | Wide      | Kind       | Size      |                                                                                                   |           |
| 18690 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 1/16"     | Bur Clover, Hop Clover, Ladino Clover, Lappaceum Clover and White Clover. . . . .                 | Regular+  |
| 17775 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 1/12"     | Alsike Clover, Mammoth Clover, Red Clover and Sweet Clover, Lettuce, Mustard and Timothy. . . . . | Regular+  |
| 17773 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 1/10"     | Alfalfa. . . . .                                                                                  | Regular+  |
| 17777 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 7/64"     | Crimson Clover. . . . .                                                                           | Regular+  |
| 18518 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 9/64"     | Millet and Spinach. . . . .                                                                       | Special   |
| 18516 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 5/32"     | Lespedeza . . . . .                                                                               | Special   |
| 17779 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 3/16"     | Flax. . . . .                                                                                     | Regular+  |
| 19116 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 7/32"     | Kafir, Milo, Feterita, Hegari, Darso, Dura, Schrock, Hydrids and Sorgo Grain Sorghums. . . . .    | Regular+  |
| 17781 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 15/64"    | Wheat, Garden Beets and Sugar Beets. . . . .                                                      | Special   |
| 17783 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 3/8"      | Vetch, Crotalaria, Okra and Soy Beans . . . . .                                                   | Special   |
| 17785 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 7/16"     | Peas. . . . .                                                                                     | Special   |
| 22010 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Round      | 1/2"      | Edible Beans. . . . .                                                                             | Regular+  |
| 18510 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Slotted    | 1/16x3/8" | Canary Grass. . . . .                                                                             | Special   |
| 18514 KA    | Shoe Sieve . . . . | 30-3/4"    | 21-15/16" | Slotted    | 3/32x1/2" | Bermuda Grass, Blue Grass and Carpet Grass. . . . .                                               | Special   |
| 18512 KA    | Shoe Sieve . . . . | 30-3/4"    | 21/15/16" | Slotted    | 5/32x3/4" | For removing "white caps" . . . . .                                                               | Regular+  |
| 16747 K     | Shoe Sieve . . . . | 30-15/16"  | 22"       | Adjustable | .....     | . . . . .                                                                                         | Special   |
| 18547 K     | Shoe Sieve . . . . | 30-15/16"  | 22"       | Adjustable | .....     | Crimson Clover. . . . .                                                                           | Regular+  |

+ - In Attachment



# SIEVES AND SCREENS - Continued

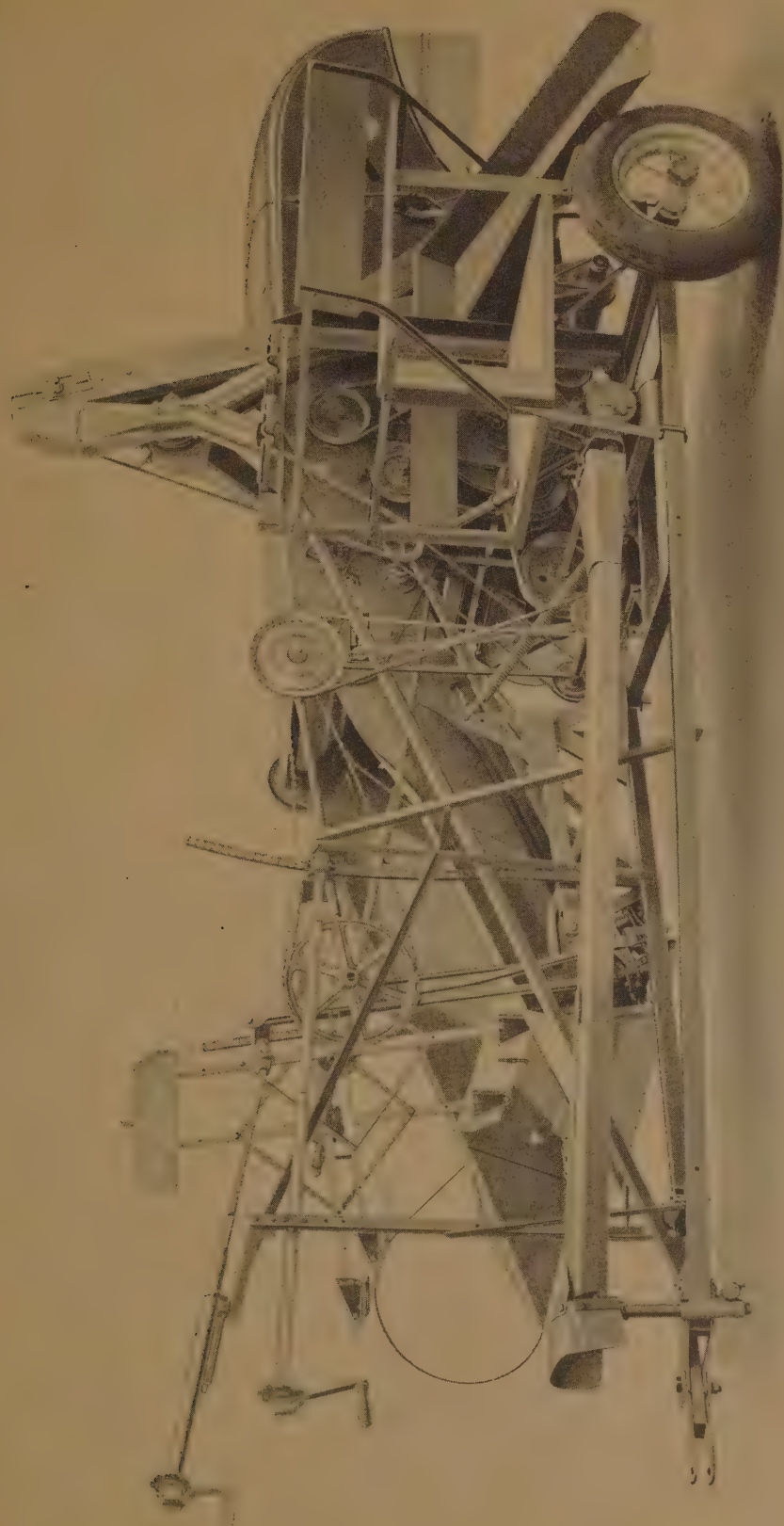
| Part Number         | Description                              | Dimensions |           | Holes                    |                | Remarks                                                        | Equipment          |
|---------------------|------------------------------------------|------------|-----------|--------------------------|----------------|----------------------------------------------------------------|--------------------|
|                     |                                          | Long       | Wide      | Kind                     | Size           |                                                                |                    |
| 17368 KA<br>18821 K | Chaffer Extension.<br>Chaffer Sieve. . . | 30-15/16"  | 22"       | Adjustable<br>Adjustable | .....<br>..... | .....<br>Fitted with High Grain<br>Dividers. . . . .           | Regular<br>Regular |
| 19301 K             | Shoe Bottom Screen                       | .....      | .....     | Slotted                  | 1/14x1/2"      | For removing Sweet Clover from<br>Grain . . . . .              | Special            |
| 17369 K             | Shoe Bottom Screen                       | .....      | .....     | Slotted                  | 1/8x3/4"       | .....                                                          | Special            |
| 18534 K             | Shoe Bottom Screen                       | .....      | .....     | Slotted                  | 9/64x3/4"      | .....                                                          | Special            |
| 17370 K             | Shoe Bottom Screen                       | .....      | .....     | Slotted                  | 3/16x3/4"      | Edible Beans. . . . .                                          | Regular            |
| 20389 K             | Shoe Bottom Screen                       | .....      | .....     | Round                    | 1/10"          | .....                                                          | Special            |
| 19118 K             | Shoe Screen. . .                         | 30-3/4"    | 21-15/16" | Wire Mesh                | 22x22          | For removing Weed Seed. . . . .                                | Special            |
| 19120 K             | Chaffer Screen. . .                      | 30-3/4"    | 21-15/16" | Wire Mesh                | 16x16          | Red Top . . . . .                                              | Regular            |
| 19122 K             | Chaffer Extension.                       | .....      | .....     | Wire Mesh                | 12x12          | Red Top . . . . .                                              | Regular            |
| 19276 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Triangular               | .165"          | Grain . . . . .                                                | Regular            |
| 19261 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Triangular               | .171"          | .....                                                          | Special            |
| 19262 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Triangular               | .140"          | Small Grain . . . . .                                          | Special            |
| 19263 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Triangular               | .125"          | .....                                                          | Special            |
| 19264 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | .0703"         | Flax, Lespedeza, Brome Grass,<br>Blue Stem . . . . .           | Special            |
| 19265 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 5/64x1"        | Buckwheat, Vetch, Grain<br>Sorghum, Okra . . . . .             | Special            |
| 19266 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 3/32x3/4"      | .....                                                          | Special            |
| 19267 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 1/8x3/4"       | Soy Beans, Small Peas . . . . .                                | Special            |
| 19268 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 9/64x3/4"      | Large Peas, Medium Beans. . . . .                              | Special            |
| 19269 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 5/32x3/4"      | .....                                                          | Special            |
| 19270 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Slotted                  | 11/64x3/4"     | Large Beans . . . . .                                          | Special            |
| 19271 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 5/32"          | .....                                                          | Special            |
| 19272 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 1/20"          | .....                                                          | Special            |
| 19273 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 1/25"          | Crimson, Red, Sweet Clover,<br>Alfalfa, Orchard Grass. . . . . | Special            |
| 22017 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 1/12"          | Alsike, Hop Clover, Timoty,<br>Flax and Clover . . . . .       | Special            |
| 22018 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 3/16"          | For removing weed seed from<br>beans . . . . .                 | Special            |
| 22019 K             | Rotary Screen. . .                       | 17-3/4"    | 8" dia.   | Round                    | 7/32"          | For removing weed seed from<br>beans . . . . .                 | Special            |

+ - In Attachment



B-849B

No. 52 Harvester-Thresher Equipped with Grain Tank Attachment.



No. 52 Harvester-Thresher Equipped with Bagger Attachment.



## SPECIFICATIONS

|                                                            |                                                    |
|------------------------------------------------------------|----------------------------------------------------|
| Width of cut with gather                                   | 5 ft.                                              |
| Length of cutter bar                                       | 4-1/2 ft.                                          |
| Cutting range                                              | 2 in. to 32 in.                                    |
| Reel:                                                      |                                                    |
| Number of bats                                             | 4                                                  |
| Type of bats                                               | Adjustable pitch                                   |
| Type of drive                                              | Power, Regular; Ground, Special                    |
| Speeds { Power Drive                                       | 24, 32, and 36 R.P.M.                              |
| Ground Drive                                               | Governed by travel speed of machine                |
| Guards                                                     | Straight, 3 in. spaced                             |
| Knife speed                                                | 404 strokes per min.                               |
| Type of platform                                           | Rubberized canvas conveyor                         |
| Platform control. Crank easily reached by tractor operator | { Manual Lift, Regular<br>Power Lift, Special      |
| Feeder:                                                    |                                                    |
| Width                                                      | 36 in.                                             |
| Width of canvas                                            | 34-7/8 in.                                         |
| Speed of upper drive roller                                | 490 R.P.M.                                         |
| Speed of lower drive roller                                | 404 R.P.M.                                         |
| Drive roller                                               | Rubber covered                                     |
| Cylinder:                                                  |                                                    |
| Type                                                       | Rub-bar                                            |
| Number of bars                                             | 6                                                  |
| Diameter                                                   | 15-9/32 in.                                        |
| Speed { Regular arrangement of regular sheaves             | 975 to 1700 R.P.M.                                 |
| Special arrangement of regular sheaves                     | 400 to 680 R.P.M.                                  |
| Special sheaves                                            | { 730 to 930 R.P.M.<br>285 to 515 R.P.M.           |
| Clearance adjustment made by                               | Raising or lowering cylinder                       |
| Concave                                                    | Reversible steel bars with removable slotted grate |
| Number of bars                                             | 5 channel                                          |
| Size of grates: { 1/4 x 1" slots                           | Regular                                            |
| 5/32 x 3/4" slots                                          | Special                                            |
| 5/16 x 1-1/4" slots                                        | Special                                            |
| 3/8 x 1-1/4" slots                                         | Special                                            |
| 5/8 x 1-1/4" slots                                         | Special                                            |
| Number of square inches of separation (maximum openings)   | 103.6                                              |
| Concave finger grate:                                      |                                                    |
| Number of square inches of separation                      | 122                                                |
| Cylinder beater                                            | 4 blade, box type                                  |
| Diameter                                                   | 12 in.                                             |
| Length                                                     | 35 in.                                             |
| Speed                                                      | 589 R.P.M.                                         |
| Number of check flaps above straw rack                     | 1                                                  |
| Straw rack                                                 | One piece, Six Section, Rotary type                |
| Length                                                     | 57 in.                                             |
| Width                                                      | 36 in.                                             |
| Speed                                                      | 249 R.P.M.                                         |
| Number of square inches of separation area                 | 2052                                               |
| Cleaning fan                                               | Undershot type, 6 Blade                            |
| Diameter                                                   | 14-7/8 in.                                         |
| Speed                                                      | 900 to 1100 R.P.M.                                 |
| Chaffer                                                    | Adjustable fin type                                |
| Length                                                     | 30-15/16 in.                                       |
| Width                                                      | 22 in.                                             |
| Shoe sieve                                                 | Adjustable fin type                                |
| Length                                                     | 30-15/16 in.                                       |
| Width                                                      | 22 in.                                             |
| Total cleaning area including chaffer extension            | 1559 sq.in.                                        |
| Shaker shaft speed                                         | 249 R.P.M.                                         |
| Grain tank capacity                                        | 18 bu.                                             |
| Number of main wheels                                      | 2                                                  |
| Tread of main wheels (machine with pneumatic tires)        | 85-1/4 in.                                         |
| Size of main wheel pneumatic tires                         | 5.50 x 16.00 (6 ply)                               |
| Length of machine overall (less spreader)                  | 19 ft. 2 in.                                       |
| Width overall:                                             |                                                    |
| With grain tank                                            | 8 ft. 7 in.                                        |
| With bagger                                                | 9 ft. 3 in.                                        |
| Extreme height (machine with pneumatic tires)              | 8 ft. 1-1/2 in.                                    |
| Approximate weight:                                        |                                                    |
| With grain tank                                            | 2245 lb.                                           |
| With bagger                                                | 2173 lb.                                           |
| Auxiliary engine                                           | 457 lb.                                            |

Specifications are subject to change without notice.

# NUMERICAL INDEX

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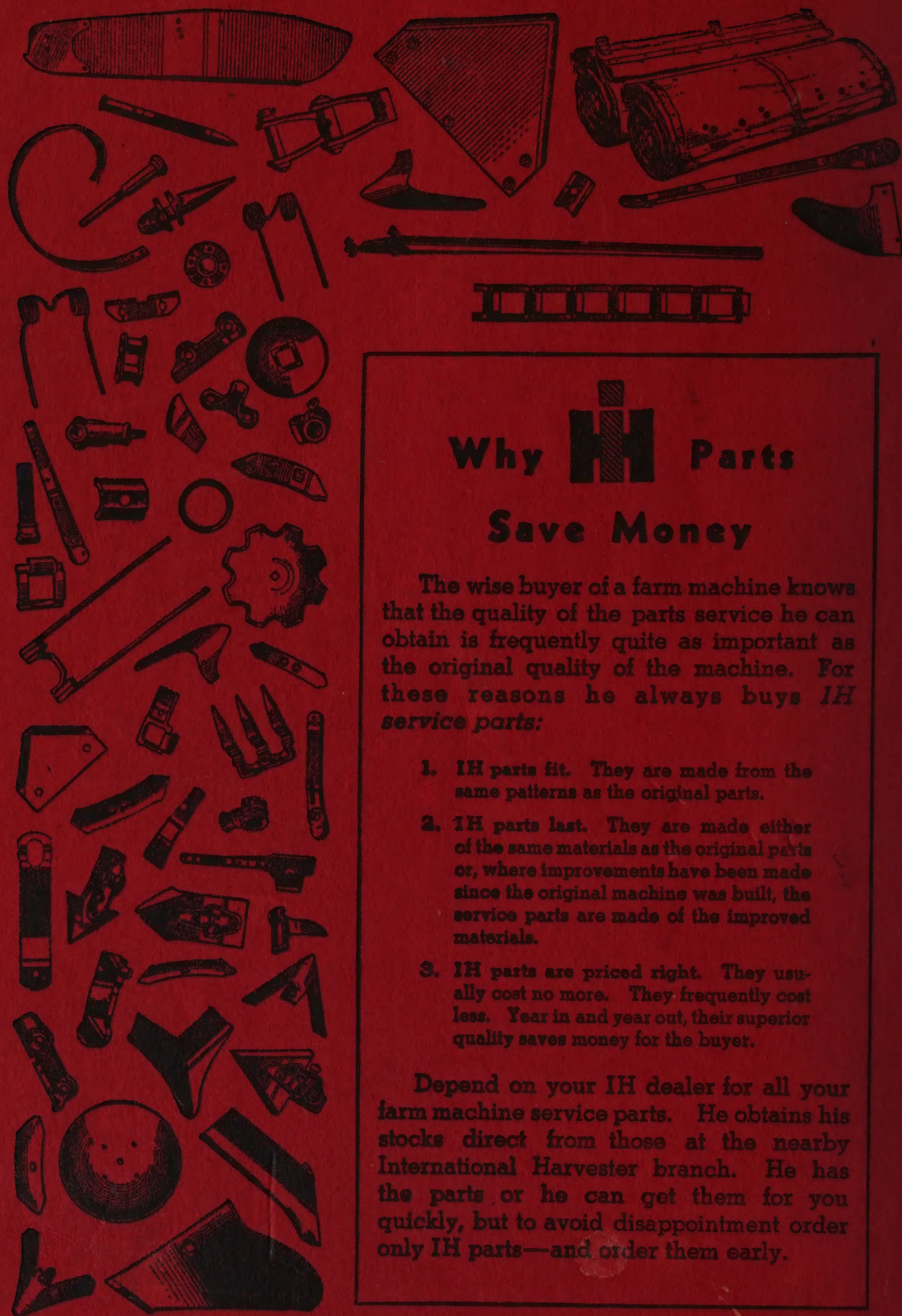
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| M 32995  | 97   | Q 3504   | 139  | 551 282 R91 | 109  | 52531 V     | 103  |
| M 34151  | 115  | Q 3504   | 141  | 551 283 R91 | 107  | 52531 V     | 105  |
|          |      |          |      | 551 284 R1  | 107  | 62621 V     | 133  |









## Why Parts Save Money

The wise buyer of a farm machine knows that the quality of the parts service he can obtain is frequently quite as important as the original quality of the machine. For these reasons he always buys *IH* service parts:

1. **IH parts fit.** They are made from the same patterns as the original parts.
2. **IH parts last.** They are made either of the same materials as the original parts or, where improvements have been made since the original machine was built, the service parts are made of the improved materials.
3. **IH parts are priced right.** They usually cost no more. They frequently cost less. Year in and year out, their superior quality saves money for the buyer.

Depend on your IH dealer for all your farm machine service parts. He obtains his stocks direct from those at the nearby International Harvester branch. He has the parts or he can get them for you quickly, but to avoid disappointment order only IH parts—and order them early.